

DECEMBER 1914 ~ No 108

Issued Every Month

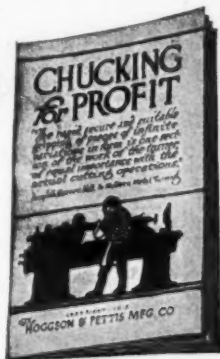
for Free Distribution to Users  
of Machine Tools

# HITCHCOCK'S MACHINE TOOL LIST

A Reference Book for Buyers  
of Iron Working Machinery

Published by  
**A. H. HITCHCOCK**  
1220-1235 Caxton Building  
Chicago

**Will You  
Accept a Copy  
of this  
Meaty Little  
Book  
if We Send it  
Free?**



In many shops the job tickets show excessive time spent in chucking the work. This often changes what should be a profit into a loss, for the man's pay is the same for chucking time as for turning time.

Inadequate chucking methods also result in the unnecessary scrapping of much costly material.

"Chucking For Profit" will help you reduce these wastes in your shop—help you add to your net profits. It is full of valuable information for the practical-man-on-the-job, the foreman, the master-mechanic and especially for the **man who pays the bills.**

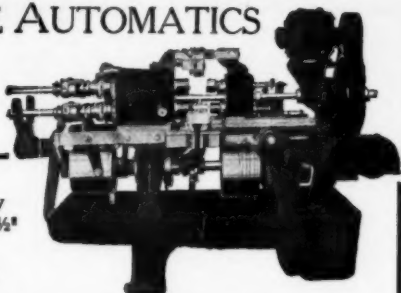
Tear out this page, write or stamp your name and address below, and mail it to us today. Your personal copy of the book will be sent at once, entirely free of cost or obligation.

**The Hoggson & Pettis Mfg. Co., New Haven, Conn.**  
**Makers of the Sweetland Chuck**

Name .....

Address .....

# ACME AUTOMATICS



Capacity  
 $2\frac{1}{4}'' \times 10\frac{1}{2}''$   
and  
Smaller

## Speed Up Production

Finished pieces in the time of *one operation* is the basis of production on the Acme Automatic Screw Machine. Acmes save time by using "all of the necessary tools at once."

It's the time of the longest operation, not the number you do, that sets completion time on the Acme. And you can complete two operations on a job, or ten, or any number in between.

Acme Multiple Spindle Automatics cover a wide range of regular and special screw machine work. They get uniformity and cut out second operation machines. Capacity— $2\frac{1}{4}''$  diameter  $10\frac{1}{2}''$  long and smaller.

*Send your samples or blue prints  
for production estimates and prices*

*Ask for the "Acme Way" Book*

NEW YORK  
BOSTON  
CHICAGO  
DETROIT  
ATLANTA  
MONTREAL

THE NATIONAL-ACME  
MANUFACTURING CO.  
CLEVELAND

NAMCO  
DIES

FOR EVERY THREADING NEED

Automatic Die Heads  
Hand Die Heads  
Adjustable Spring Dies  
Spring Style Pipe Dies

CATALOG ON REQUEST

# THINK! It Pays

## Riveting Jobs—For Example

If it takes a man 45 seconds to rivet a certain article—  
That equals 80 per hour, or 800 pieces per day.

That 45 seconds don't amount to much on one piece.

That man can spot weld the same piece in 8 seconds—  
That equals 450 per hour, or 4500 pieces per day.

And here's where the seconds count.

Figure out the savings in a month, or a year, and you sit  
up and take notice.

**Think** of the 60% to 90% we claim can be saved  
by spot welding.

**Think** how you could cut your costs to meet com-  
petitive prices.

**Think** of our make - good - or - take - back trial  
proposition—

Then *think* if it won't pay to write us for our free bul-  
letin telling about "The Saving Way," and *do it now*.

## Butt Welders—Seam Welders—Spot Welders

*That's our specialty—making welding machines*

No Lease

No License

No Royalty

## The Toledo Electric Welder Co.

HARTFORD, CONN.,	CINCINNATI, O.,	CHICAGO, ILL.,
450 Asylum St.	Station A	323 N. Sheldon St.
A. V. B. Cutler, Mgr.		A. M. Searles, Mgr.



# STAMPINGS

Let us handle your stampings, sheet metal work, etc., and save you the expense of installing a special department in your plant for this work. You haven't enough of it to keep machines running full time. The overhead on idle machines eats up your profits and boosts high costs higher. We will turn this loss into profit.

## G.P. & F. Service

Knowing How Since 81

Perhaps you are casting some parts now that we could produce at lower cost by stamping. Our 15 acres of equipment and large force of experts, trained by specialized experience, together with 33 years of producing quality work for hundreds of manufacturers, fits us to measure up to your requirements.

### *Send for Estimates*

Send samples or complete specifications—or both—and state the quantity desired. Our figures will go forward immediately.

We are specialists in Stamping, Drawing and Spinning in Brass, Copper, Aluminum, Tin, Monel Sheet and Steel, and are fully equipped for Porcelain Enameling, Japanning, Tinning, Hot Galvanizing and job work of any kind.

## **Geuder, Paeschke & Frey Co.**

1371-1700 St. Paul Ave.

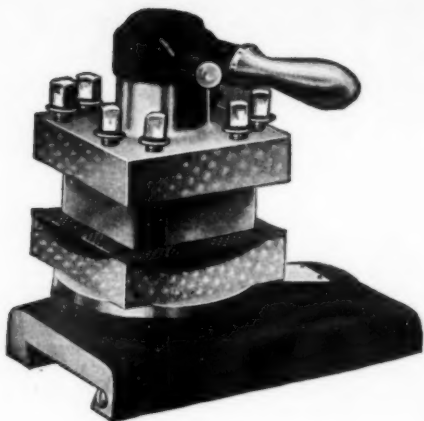
MILWAUKEE, WIS.

### **PORCELAIN ENAMELING**

*Special Equipment for Quantity Production*

### **SHEET-METAL ARTICLES & PARTS**

*Special Equipment for Quantity Production*



**Your Lathe Needs**  
**A New Tool Post**

**One of the Modern Multiple Type**

You can no longer afford to use the old style single tool holder.

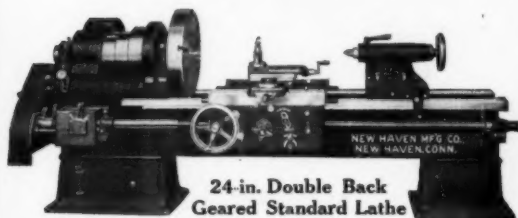
Give us the size of the dovetail on your lathe carriage and height to lathe center; we will quote you price on a Modern Tool Holder that we guarantee will increase your production, and give you some interesting facts about Lathe Turrets.

No matter what make or size of lathe—we can fit it.

**Fay & Scott,    Dexter, Me.**

If You Need a Lathe  
**You Need a "New Haven"**

Because it will Satisfy You  
In both Quality and Price



*New Haven Lathes* range from 18" to 65" swing, single and double back gear and triple gear, belt or motor.

We carry in stock for prompt shipment 18", 21", 24", 28" and 32", in various lengths. If in need of a larger size, send us your inquiry and we will advise if we can ship at once or how soon after receipt of order.

New Haven Standard Lathes, from 18" to 28" swing, offer most exceptional values at a moderate price. The 24" Standard is illustrated above.

Our Improved High-Power Engine Lathes, from 24" to 65" swing, have built into them the best that there is in modern lathe practice.

*Let us quote on your lathe needs. We can satisfy any reasonable demand in both quality for price and price for quality.*

**New Haven Manufacturing Co.**  
New Haven, Conn.

## Best Lathe Buy for the New Year



**16-in. Engine Lathe  
With 3-Step Cone and  
Double Back Gears  
At a Moderate Price**

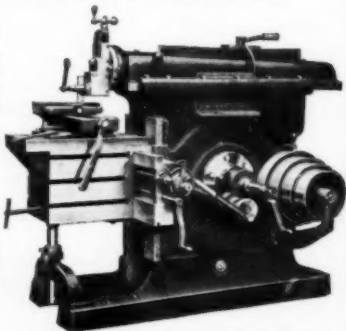
WITH ALL STEEL gears, large bearings, phosphor bronze boxes and rigid bed, this high grade, moderate priced lathe offers unusual value. Include one in your 1915 budget.

**The Von Wyck Machine Tool Co., Cincinnati, O.**

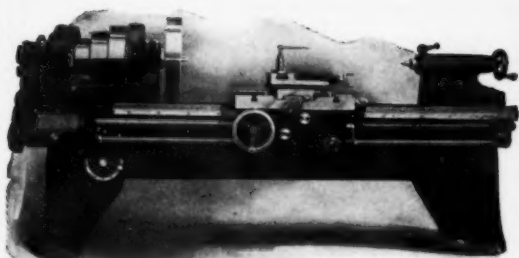
## SHAPERS

12", 14", 16"  
Plain Crank,  
16", 20", 25"  
B. G. Crank,  
either Cone  
Driven or  
through  
Speed Box.

24", 28", 32"  
Geared  
Shapers of  
the Belt Shift  
type.



**The Smith & Mills Co.** Station B,  
Cincinnati, O., U.S.A.



## **The Walcott Lathe Has the Following Superior Features**

**Feed gears run in oil.**

**Gears in gear box are all steel.**

**Drop Forge gears in apron.**

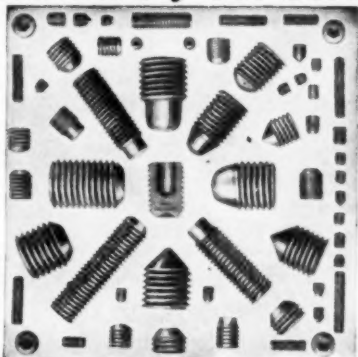
**Headstock gears, as well as others  
entirely covered.**

**Made In  
14", 16", 18", 20", 25" & 28" Sizes**

*Write us for further particulars.*

**Walcott & Wood Machine Tool Co.  
Jackson, Mich., U.S.A.**

## Allen Safety Set Screws



Send for circular No. 13 and sample screws (for testing).

**ALLEN MFG. CO., - Hartford, Conn.**

## Don't Spend a Fortune on High Speed Steel

You can reduce your investment in High Speed Steel to one tenth the amount needed in Forged Tools besides **SAVING** all Forging and nearly all the Grinding by using

## Armstrong Tool Holders

on your LATHES and PLANERS



They are used in most of the Big Machine Shops of the World.

*Catalog sent for the asking*

**Armstrong Bros. Tool Co.**

"The Tool Holder People"

308 N. Francisco Ave., Chicago, U. S. A.



# What Is The Secret

Of Geometric Tools producing better Screw Threads than any other method?

Just this: **We Specialize**

Geometric Screw-Cutting Tools are the result of  
**Concentrated Effort**



The name "Geometric" on any screw-cutting tool means a guaranteed tool of highest quality.



Collapsing Taps (that require no backing out) for tapping 1-inch diameter and up.

Self-opening Die Heads (that release the work when the required length is reached) for cutting 1-16-inch diameter and up.



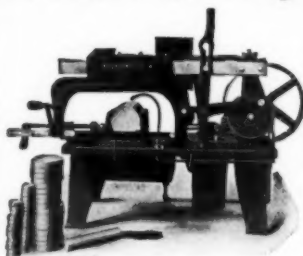
In use on every make of Screw Machine and Turret Lathe.

*Write us. We will answer your inquiry promptly.*

**The Geometric Tool Company**  
New Haven, Conn.

Chicago Office, 547 West Washington Boulevard

## ECONOMY No. 4 High Speed Saw



**Just Think**

Only 24¢ for  
Blades to cut  
51 Gear Blanks,  
570 Sq. Inches  
soft steel.

EVERY BLANK  
CUT TRUE, no  
waste.

Our saws not only save you money in blades and material, but the saving is enormous on your lathe work. We build thirty-seven different types and sizes. Every one guaranteed.

*Write today for booklet.*

**W. Robertson Machine & Fdry. Co., Buffalo, N. Y.**

## This Automatic Saw Running At High Speed

cuts bars into

**Duplicate Pieces**

all alike in lengths desired **with-  
out operator's attention.**

**It Feeds the  
Bar and Saves**  
labor, time, blades.

It's a modern  
money maker.

*Write us for complete de-  
scription and price.*

**Armstrong-Blum Mfg. Co.**  
341 N. Francisco Avenue  
Chicago, U. S. A.

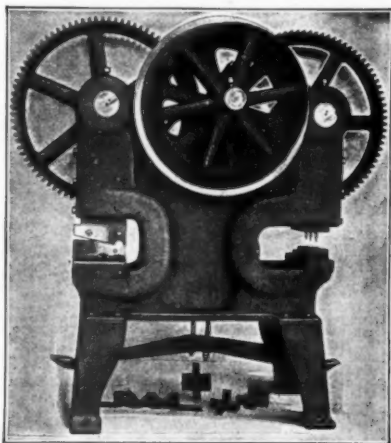


**"Marvel" No. 5**



## **Punches—Shears—Bending Rolls**

**The Beloit Double End Combined  
Power Punch and Shear**



***Built in Three Sizes  
No. 9-A***

This combined power punch and shear is of the double end type, having a cutting-off shear on one end and a triple punch attachment on the other. Either one, two or three punches at a time may be used by inserting the sliding keys back of the proper punches. An angle shearing attachment can also be furnished if desired.

We manufacture a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls. We do not over-rate the capacities of our machines.

*Write for catalogue and prices.*

**Slater, Marsden & Whittemore Co.**  
**Box 444, Beloit, Wisconsin**



## PEACE

has been declared in thousands of factories in the U. S. A. where there is riveting done.

Antiquated hammer blow methods have been abandoned to make room for **Grant Noiseless Riveting Machines.**

**Speediest Riveting Machine** on the market today.

Produces a finer finished rivet head than can be accomplished by any other process.

No danger of marring surface of article being riveted.

Let us prove our claim by sending a few samples to be riveted and returned to you.

*Catalog!*

**The Grant Mfg. & Machine Co.**  
C. E. Station, Bridgeport, Conn.

## A Free Trial Shows How Our Ball-Bearing Abrasive Cutter

**Soon Returns its Initial Cost  
In the Saving of Material Alone**

Its rapid work is another economy, the 1-16" wheel cutting the hardest steel so quickly that the temper is not drawn. Equally effective on all steels and tools, tubes, rods, and on bars of brass, copper or aluminum.

**8" Size, \$16.50, with C. S.**

Splendid for tool room. Cuts high-speed steel up to 1" square.

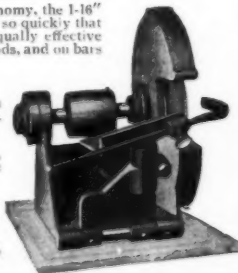
**12" Size \$42, with C. S.**

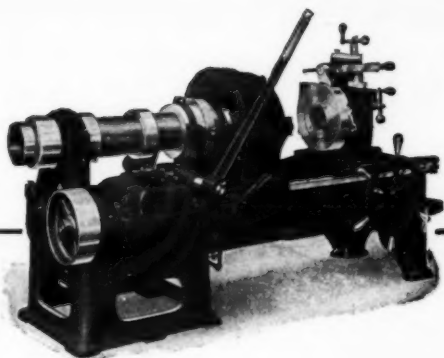
Cuts up to 2 1/2" diameter, round or square, at any angle up to 45 degrees.

**15 Days' Free Trial**

Write us or ask your dealer

**PETER BROTHERS MFG. CO.,**  
115 Railroad St., Algonquin, Ill.





## Economy in Pipe Threading

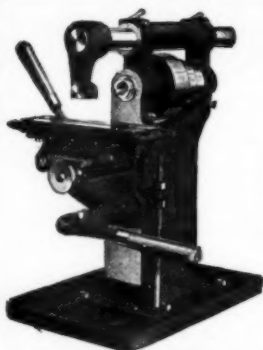
**Is assured you with B. & K. Machines  
They've proved it daily for 30 years**

Whatever your requirements may be for the new year, we have the machine that will do your work right, and do it at the lowest cost.

Every one of our seventeen styles and sizes is equipped with the Peerless Adjusting Mechanism. It is simple, reliable, and quick of adjustment to the thousandth of an inch without the use of tools.

*You want capacity, accuracy and economy—that's why  
we recommend B. & K.'s. Write us your  
needs and ask us to prove up.*

**Bignall & Keeler Mche. Works**  
Edwardsville, Ill.



## Burke's No. 3 Bench Millers

### Are Seasoned Tools

Our system of tests insures accuracy, and our methods of construction make it permanent. Frames and parts are carried 6 to 8 months, after work begins on them, before the completed tools receive our final O. K., and all parts are finished and fitted with exceptional care.

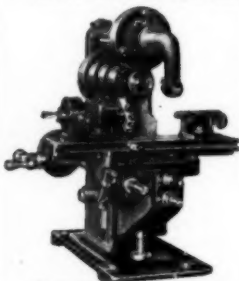
Longitudinal feed, 6 in.; traverse feed,  $3\frac{1}{2}$  in.; vertical motion of knee, 8 $\frac{1}{2}$  in.; table surface, 3 $\frac{1}{2}$  x 12 inch.

*Write for Catalog, which also shows larger and smaller sizes.*

**The Burke Machine Tool Co.**  
Conneaut, Ohio

## Rockford No. 3 Hand Miller

With Longitudinal Power, Screw or Lever Feed  
Vertical and Transverse Hand Screw Feed on Column



### Range of Feeds

11" x 4" x 6 $\frac{1}{4}$ "

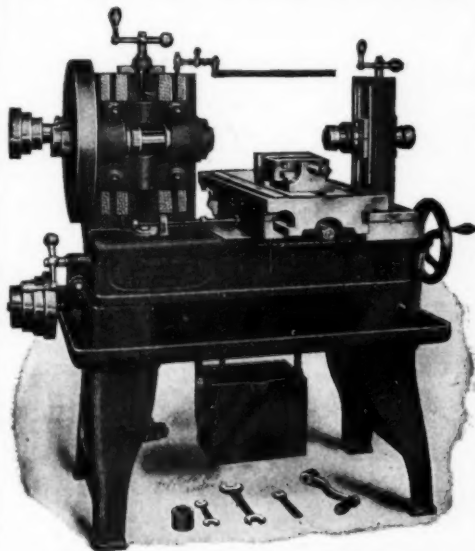
This miller, with attachments, is very complete. The alignment is perfect, and it is just the thing for close work. It is stiff, powerful, convenient, and carefully built for lasting accuracy.

*Write for folder, showing several views and attachments—also for description of other sizes desired.*

With Dividing Centers

**ROCKFORD MILLING MACHINE CO., Rockford, Ill.**

# This Lincoln Miller



—is carefully and intelligently designed, is thoroughly well made, and will give you value received for every dollar invested. It's our latest model and has features which make it especially desirable as a manufacturing miller. We have them in stock and can make prompt shipment.

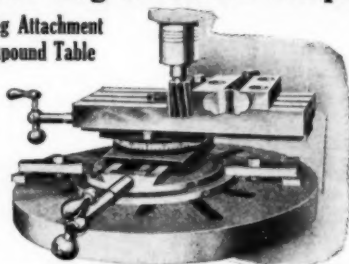
*We shall be pleased to send you circular.*

**The Carter & Hakes Co.**  
West Winsted, Conn.

## Good for Big or Small Shops

### Davis Milling Attachment and Compound Table

Converts  
any Drill  
Press from  
14 to 42-in.  
swing in  
2 Minutes



WHEN the large millers are tied up with work, the Davis comes in handy for milling of ends of bosses, spotting castings, etc. The shop that hasn't enough work for a big miller finds that the Davis does most of the lighter milling as well as a \$1,000 machine. Our price is way under \$100. Write us.

**Hinckley Machine Works, HINCKLEY, ILL.**

## Let a Force of Specialists

### Reduce Your Manufacturing Costs

Our organization and complete line of modern tools and specialties can be had to help you produce better work at lower costs. Air operated chucks, mandrels, jigs and fixtures, collapsing taps, dies, auxiliary drill heads, Kelly reamers, etc., are among our result producers. No matter what your problem, send us a blue print or sample of work for tool layout and estimate of time and cost.

**ESTIMATES**

**PRODUCTION**

**J. R. STONE TOOL & SUPPLY CO.**

**Efficiency Guaranteed**

**DETROIT, U.S.A.**

**MICHIGAN, U.S.A.**

**SPECIALISTS**

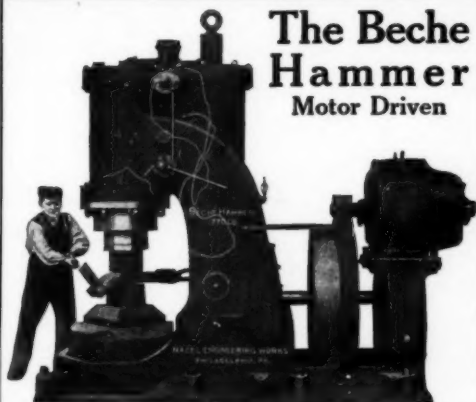
**DEMONSTRATIONS**

We send the tools  
on approval

Mail us B-P today

**J. R. STONE  
TOOL & SUPPLY CO.**

24 Goebel Bldg.,  
Detroit, Michigan



**The Heaviest, Most Powerful, Efficient  
and Economical Hammer of Its  
Size on the Market.**

*Hammer and Compressor Combined, No Piston  
Rods, Springs, Straps or Cushions.*

**Simple—Durable—Reliable**

Powerful, non-bounding, squeezing blow. Positive, flexible control. Long stroke. Variable blows at will. No adjustments. Dies at any angle. Belt drive, no countershaft. Motor drive, geared direct.

**Sizes and Efficient Capacities of Beche Hammers**

No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
2" dia.	4" dia.	5" dia.	7" dia.	8" dia.	9" dia.

*Write for Catalogue and Prices*

**Nazel Engineering & Machine Works**

Sole Builders for United States and Canada

5th and Luzerne Sts. - - Philadelphia, Pa.

# The "Barnes" Drills

8 in. to 50 in. Swing

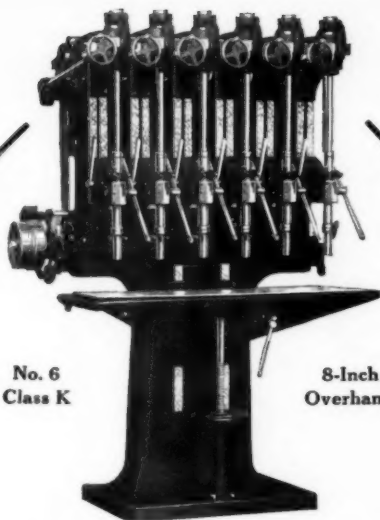


OUR POSITIVE  
FEED "makes 'em  
talk," and why  
shouldn't it? Simple  
and Strong; been on  
the market since year  
1903 (not new and  
untried); gives best  
of satisfaction, and  
will feed a drill or  
boring bar without  
a slip or hesitating  
movement.

*Send for  
Drill  
Catalog*

**W. F. & Jno. Barnes Co.**  
22 Ruby Street, Rockford, Illinois





**No. 6  
Class K**

**8-Inch  
Overhang**

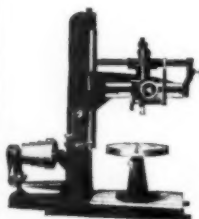
## **It Costs Less To Drill Holes With Henry & Wright Improved Machines**

and because drilling does cost less with them, close-figuring manufacturers are displacing their old equipments with these economizers, saving in a few months the entire cost of the change. Can we do that for you? Let our Engineering Department determine just what we can do, without expense to you or obligation to buy. It is information worth having, and you get it free. More than likely it means a substantial reduction in what you pay out for drilling.

*A line of inquiry will bring particulars  
and a more definite proposition*

**The Henry & Wright Mfg. Co.**  
760 Windsor St., Hartford, Conn.

Nature would have made a Radial Drill just like the "Gang." A test of a drill is in its ease and freedom—"as the eye is."



The New Gang Radial Drill Catalogue ready for mailing

**THE WM. E. GANG CO.**  
Cincinnati, O.

## Dependable Service

### Mechanics' Drills

are all around reliable tools—capacity, accuracy and power are there a'plenty.

Quality and prices are both right on our complete lines of Standard Upright and Gang Drills.

*Let us prove that Mechanics' Drills will serve you better*



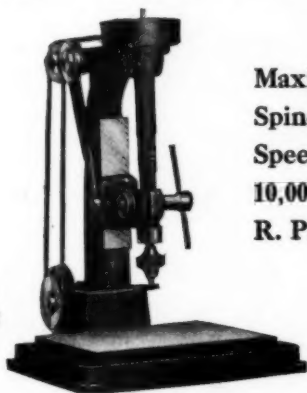
23-inch  
Back  
Geared

**ROCKFORD MACHINE TOOL CO., - Rockford, Ill.**

Manufacturers of Planers, Shapers and Mechanics' Drills.

# Save Money

with this  
**High Speed Drill**



**Patents  
Pending**

**Maximum  
Spindle  
Speed  
10,000  
R. P. M.**

**Double Your Production on Holes  
up to  $\frac{3}{8}$ " in diameter**

This machine is carefully and accurately built to give the greatest service. Equipped with Hess Bright Ball Bearings throughout.

*Ask for Bulletin No. 502*

**Leland-Gifford Co.**  
**Worcester, Mass., U. S. A.**





## **The "Economy"**

### **10 in. Bench Drill**

Built upon the principle of our larger sensitives, it marks a step forward in the capacity of bench drills. Table swings around column, tilts to any angle, and has adjustable gauge for angular drilling. The forged and ground high carbon steel spindle has ball bearing thrust. The patented belt tightener is also a valuable feature. Furnished with 2-step cone and driving pulleys or 3-step cone and countershaft.

*Write for description of this and our  
12 OTHER STYLES of Drill Presses*

**ROCKFORD LATHE & DRILL CO., - Rockford, Ill.**

Also 13, 14 and 16-inch Engine Lathes

## **No. 7 16" BARR**

**Is an A-1 Drill**

Weight, 550 Pounds  
Capacity,  $\frac{3}{4}$ -Inch  
Has Belt Tightener

**Price \$70.**

Also Multiple Spindle Drills

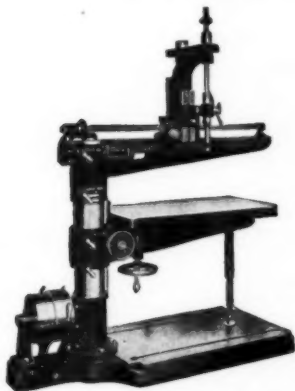
*Send for descriptive circular*

**Reed Drill Co.**

43 Hammond St., Worcester, Mass.



The Taylor & Fenn  
**Manufacturers' Drilling Machine**  
With 3-Foot Radial Arm



**IT HAS NO EQUAL**, in capacity and economy, for drilling holes up to  $\frac{3}{4}$  in. in pieces too big or too heavy to be conveniently handled on our other standard types of machines.

**BY APPLYING** drilling heads of different types it can be made to cover nearly all drilling requirements within its range. A gear box on the back of the drilling head gives three spindle speeds. While thoroughly rigid in construction, it is the lightest machine of its type.

*Doubling and trebling the output without any increase in labor cost is the work of T. & F. machines. Get posted.*

**The Taylor & Fenn Company**  
Hartford, Conn.

## A Trial Offer Without Strings

Just tell us the size of shank desired, and we shall be glad to send you



### The "SIMPL"

#### Adjustable Boring Tool

on 30 days' free trial, without obligation to buy. We leave it entirely to you.

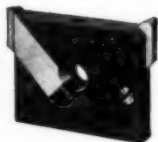
The features of "SIMPL" Tools are wide range, adjustability, the accuracy of the single cutting tool, and the few-simple-parts idea that enables us to combine a high-grade construction with a *low price to you.*

*Our circular shows its use on various kinds of work.*

---

**ALLEN & CURTISS CO.**

"SIMPL" TOOLS  
415-417 S. MAIN ST.  
MISHAWAKA, IND.



### The Production Boss

## "Don't Care A Cuss"

What make or kind of tool he uses—he wants **SERVICE**; he must have **continuous PRODUCTION.**

**KELLY Adjustable Boring Tools and Floating Reamers** give just the service he wants, or they are **returnable** at our expense.

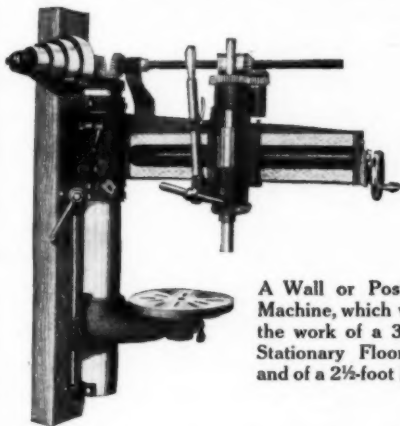
*Ask for Catalog H., our NEW ONE.*

**THE KELLY REAMER CO.**  
CLEVELAND, OHIO, U. S. A.

C. W. Burton Griffiths & Co., London, English Agts. 40 Domestic Agencies

# A Low-Cost Radial

## Of High-Grade Construction



A Wall or Post type Machine, which will do the work of a 30-inch Stationary Floor Drill and of a 2½-foot Radial

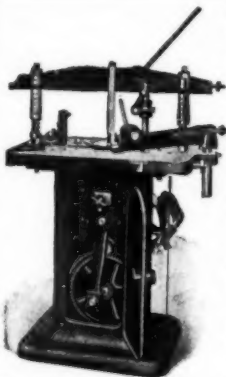
Many a shop, with one or more upright drill presses, needs a radial mighty badly at times, where there isn't enough work for it to warrant buying a new floor-type machine of that kind.

That's where the Canedy-Otto Wall or Post Radial comes in, for in actual work it combines the services of both upright and radial, and it is evident at a glance why we can make it of the highest-grade construction at a much lower cost than the floor-type machine.

*You can think it over better if you first get full particulars*

### Canedy-Otto Manufacturing Co.

Chicago Heights, Ill.



## Davis Keyseaters

**Stand for Rapid Production**

They meet every requirement as a manufacturing machine and can be economically used on large and small lots. Also adapted for Slotting, Oil-grooving, cutting Keyways in Bell-cranks and similar work.

**Made in two sizes:**

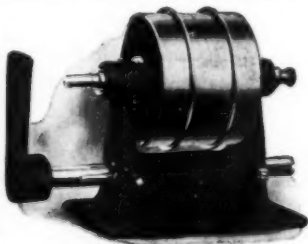
No. 1 Capacity  $\frac{1}{2}$  in. to 1 in.

No. 2 Capacity  $\frac{3}{4}$  in. to  $1\frac{1}{2}$  in.

*Write for complete information and copy Treatise on Keyseating, mailed free*

**The W. P. Davis Machine Co.,** 307 St. Paul St., Rochester, N. Y.

## This Tapping Machine Now Has Greater Capacity



**Burke's**

**No. "D" Taps**

**$\frac{5}{8}$ " Holes**

**in**

**Horseshoe**

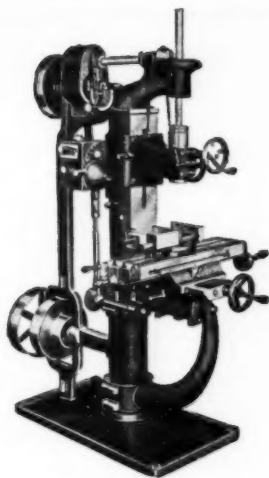
**Steel**

BUILT throughout with exceptional care, our several sizes give service in proportion. Accurate, rapid and convenient, they give solid satisfaction. No. "D" set is for \$35.

*Send for details today.*

**The Burke Machine Tool Co.,** Conneaut, Ohio





## To Lower Shop Costs in 1915

**Put a Knight Milling and Drilling Machine on the job, and get results**

- ➔ Mills, bores and drills at any angle with only one setting of the work.
- ➔ Equally good on dies, jigs, metal patterns, moulds, etc. Its great convenience makes it equal to two or three ordinary machines.
- ➔ Saves 20 to 50% of time in tool room, experimental shop, and on hard machining of all kinds.

*Three sizes to select from—now—for 1915*

**W. B. Knight Machinery Company**  
**St. Louis, Mo.**

## **"M. E. C." Collapsible Tap Users Save Money! Why Not You in 1915?**

Let us convince you that the "M.E.C." Collapsible Tap is different from all others, by sending you a tap on 30 days' approval.

Made in sizes from 15-32 in. to 3 in. straight threads, including  $\frac{1}{4}$  in. to  $2\frac{1}{2}$  in. iron pipe sizes.

Ask for catalog L.

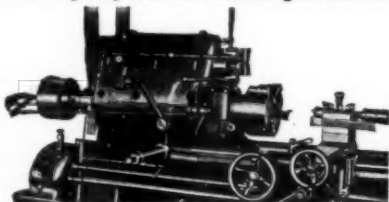
### **Manufacturers Equipment Co.**

169 No. Jefferson St.,  
Chicago, Ill.

We also manufacture various styles and sizes of "M.E.C." Air Chucks & furnish complete equipments of tools for brass & iron manufacture.



## **Hannifin Air Chucks In Many Styles for All Requirements**



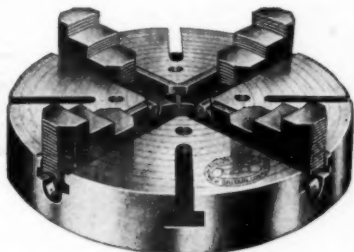
### **Our 3-Jaw Aero Universal Chuck on Large Turret Lathe**

They take away much of the operator's work, and do it much more quickly and effectively, enabling him to increase his output from 10 to 100 per cent. In many instances it has increased production above that of large, expensive semi-automatic machines—certainly an inexpensive device to effect so great a gain.

*Sent on approval. Write for description and trial offer.*

**HANNIFIN MFG. CO., 621-25 S. Kolmar Av.  
CHICAGO**

# Union All Steel Independent Chucks



The body or shell is made of a **steel casting**, and is designed for heavy duty and hard usage. The jaws are wider than in the ordinary Chuck and the operating screws are correspondingly large. These points insure a strong, rigid and durable Chuck, just what is required with modern Machine Tools.

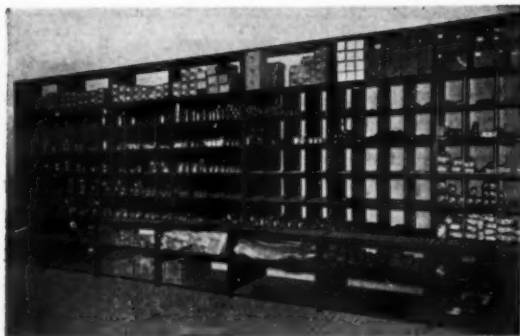
*Be sure and specify "Union"*

**Union Manufacturing Co.**

New York Office,  
26 Cortlandt St.

New Britain, Conn.

Makers of a Complete Line of Chucks



## Why Use Wooden Fixtures?

### When Terrell Steel Costs So Little More?

Storage fixtures of steel save in so many ways—in insurance, in space, in upkeep expense, in convenience and in the cost of handling material, to say nothing of the diminished fire risk—that they are entitled to your careful consideration purely as an economical proposition.

Let us show you, without expense or obligation, just how little they will cost. Our engineers will be glad to submit estimates for either present or future consideration, and we know you will find the figures both interesting and valuable.

Our adjustable interchangeable units give flexibility to a storage system, making it easily adaptable to varying requirements, which adds immensely to its value.

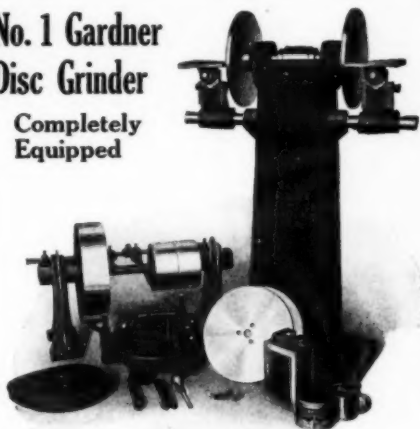
*Push the button and write now*

**Terrell's Equipment Company**  
**Grand Rapids, Mich.**

Do you need Lockers? We can interest you.

## **No. 1 Gardner Disc Grinder**

**Completely  
Equipped**



## **A "Precision" Disc Grinder**

**Radial and Thrust Ball Bearings**

Every metal working plant in the country can use a Gardner No. 1 to big advantage. It is a "handy" and accurate tool and an inexpensive one as well. The tool room, assembling floor, machine shop, model works and garage have many jobs for a Gardner No. 1 every day.

### **Equipment Furnished**

The equipment furnished with these machines is complete in every detail and ready to start the machine in operation at once: four 12-inch Disc Wheels, two work tables, wheel press, counter-shaft, extra abrasive discs, cement, grease, extra wheel screws and wrenches.

*Immediate deliveries*

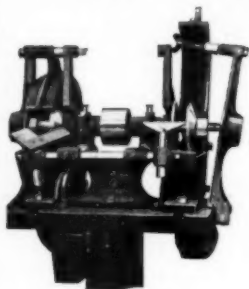
## **Gardner Machine Company**

*The Disc Grinding Authorities*

**Beloit, Wis.**

**Largest Disc Grinder Builders in the World**

# You Want One?



Patented

The Grinder  
that Guards  
both Men  
and Pay-roll.

## Partridge Emery Grinders with Adjustable Wheel Guards

Will resist shock in case wheel breaks, preventing accidents, and saving your men, your time and your money.

Keep sparks from flying. Keep your men at the grindstone and not laid up at home or at the hospital at your expense with emery in the eye, or wound from broken emery wheel.

**Increase your profits.**

*Get ready for the 1915 Boom!*

**E. O. Partridge**

2039-49 W. Lake St.,

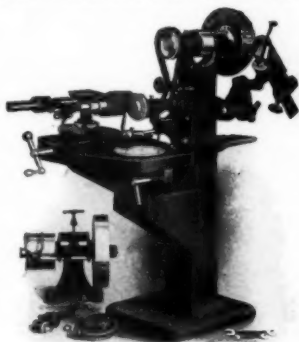
Chicago

**This is An Inexpensive**  
**Cutter, Reamer and Drill Grinder**

**It has Generous Range and Capacity**  
**The Price is Within Your Reach**

**Don't delay—look it up now!**

**Particulars, prices, etc., sent on request.**



**Style BX**

**We also make**

**Drill Grinders—Surface Grinders—**  
**Lathe Center Grinders—Universal**  
**Grinders—Tool Grinders—etc.**

**Wilmarth & Morman Co.**

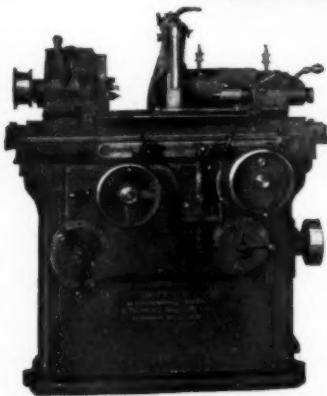
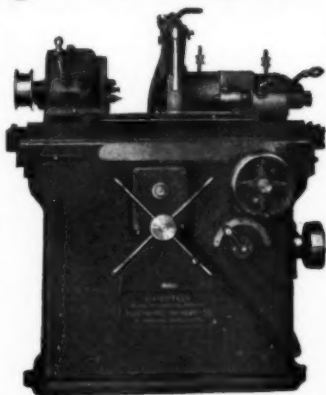
**1185 Monroe Ave., Grand Rapids, Mich.**

## A Manufacturing Machine of Large Capacity

# Fitchburg 6-15 Grinder

One that because of the power and rigidity embodied in it has a commercial accuracy and rapidity of production guaranteed beyond that of any machine of equal wheel capacity.

This machine affords ease and economy in operation because of its **Centralized Control**.



Its limits are 6"x15" work for straight or taper cylindrical grinding. Dead or live centers can be used—made in two styles. It can show you a marked decrease in floor space now required.

Durability and accessibility are made facts by its design. Details as given in our catalog will convince you.

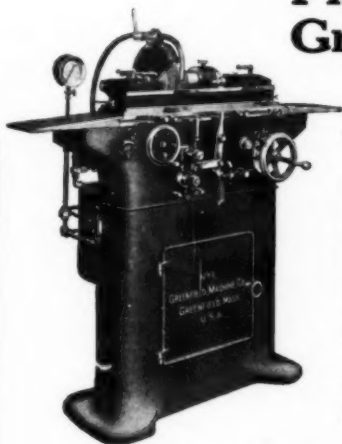
*Would you let this chance for lower grinding costs pass by? Write*

**THE FITCHBURG GRINDER CO., Fitchburg, Mass.**



# *Greenfield*

## Plain Grinder



An  
Accurate  
High  
Production  
Machine  
at  
Low Cost

The HYDRAULIC TABLE FEED is so simple in construction and eliminates so many expensive parts that it makes a very decided saving in cost. That is one reason we are able to offer such a high grade grinder at so low a price.

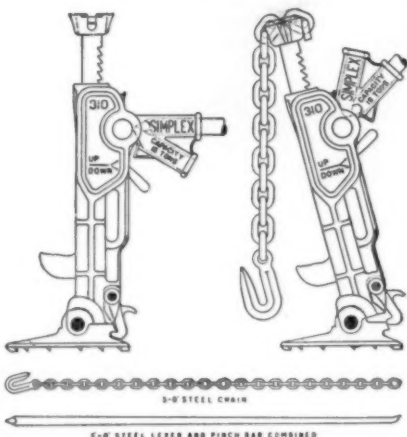
Another reason is that in designing a machine for small work only we have not been obliged to use parts of excessive weight.

We offer you a simply designed, smooth acting machine, amply heavy for any work within its range, and at a price that will surprise you.

**Greenfield Machine Company**  
Greenfield, Mass., U. S. A.

# SIMPLEX

Tools of extraordinary merit and fundamental principles of safety



**No. 310 Simplex Emergency Jack, Chain and Lever Bar included. Capacity, 15 tons.**  
**Operative at any angle from 0° to 60°.**  
**Automatic in raising, lowering and pushing.**  
**A Portable Crane.**  
**Originally designed for railroad emergency service—now universally used for industrial purposes.**

Turning  
 ment asset  
 desire and

The mo  
 Simplex Ja

“Pay

There is

Rightly

“Th  
 is as  
 the S

Internat

Your rec  
 —without

Circular

Temp

1024 S

Established 18

# **EX JACKS**

rit and construction in which the safety and efficiency are basic.

Turning nonproductive expense into a permanent asset is practical — and merely requires the desire and the proof.

The most satisfactory feature of the use of a Simplex Jack is the knowledge that your

*"Pay Roll has been permanently reduced."*

There is a Simplex Jack for every purpose.

Rightly and properly we add

*"There is not a Jack manufactured that is as efficient, safe and economical as the Simplex Jack."*

International Gold Medal for Safety & Efficiency.

Your request for a Simplex Jack for 10 days' use without obligation — will be cheerfully granted.

Circulars or additional data upon request.

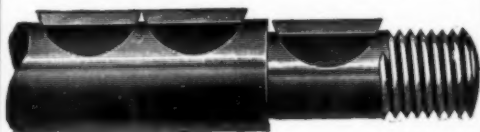
**Templeton, Kenly & Co., Ltd.**

1024 S. Central Ave., Chicago, Ill., U. S. A.

Established 1899

Trade Mark "Simplex" Registered

# **"Whitney" Keys and Cutters** **For** **"The Woodruff System of Keying"**



**No. 16 CUTTER FULL SIZE**

"Whitney" Keys are made in 114 different sizes and in three grades as follows:

***Regular Carbon Steel Keys***

***Regular Carbon Steel Keys Case Hardened***

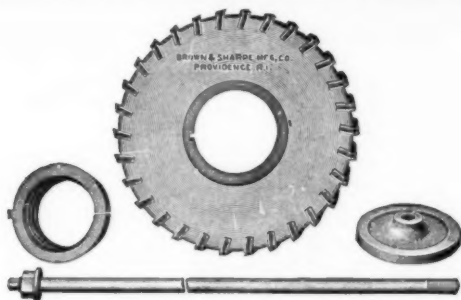
***Nickel Steel Keys Heat Treated***

"Whitney" Cutters are furnished in both Carbon Steel and High Speed Steel, so no matter what your requirements, you will find in our line exactly the Key and Cutter to meet your particular conditions.

***Catalog No. 10 Gives Full Particulars***

**The Whitney Manufacturing Co.,**  
**Hartford, Conn.**

**Chains—Keys—Hand Milling Machines**



You don't need a sledge to take this cutter off a milling machine spindle

## The B. & S. Inserted Tooth Face Milling Cutter

is instantly released, by a few turns of the drawbolt.

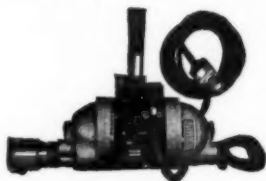
Other features are that these cutters can be made interchangeable on machines with spindles of different sizes and have an improved method of holding the inserted teeth.

*Our cutter catalog and further information upon request.*

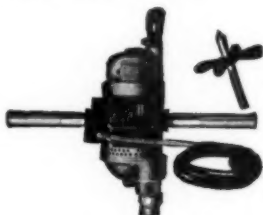
**Brown & Sharpe Mfg. Co.**  
Providence, R. I., U. S. A.

# Universal Motor Drills

For Use On Either Current



This drill is made in 3-16",  $\frac{1}{4}$ ",  $\frac{3}{8}$ " &  $\frac{1}{2}$ " size. Gears run in grease. Motor air cooled, and is made to stand hard service. Sent on trial.



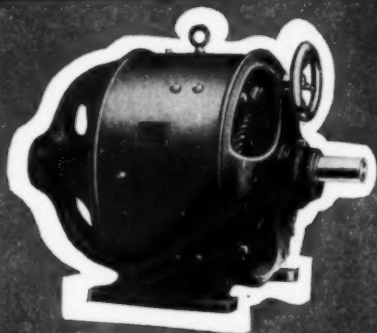
## 0 to $\frac{7}{8}$ Universal Drill

The motors used in these drills are Westinghouse motors, and operate on 25, 30, 40 or 60 cycle. 110 or 220 volts.

**The U. S. Electrical Tool Co.**  
Cincinnati, Ohio

NEW YORK, - 50 Church St. CHICAGO, - 9 S. Clinton St.  
BOSTON, - 12 Pearl St. ST. LOUIS, 511 Commercial Bldg.

Stock carried at branch offices.



## For your machine tools

You need an easy way of changing cutting speeds to suit all sizes and kinds of material. The simplest and surest way of getting just the speeds you want is by applying

### **Reliance Adjustable Speed Motors**

These motors run at any speed with a constant horsepower output over any range up to 1 to 10. To change the speed just turn the hand wheel--no electric controller is needed.

Get the details in Folder 10 L.

*(We also build constant speed motors)*

**Reliance Electric & Engineering Co.**  
1050 Ivanhoe Rd.                      Cleveland, O.

## Perfect Steel Balls At Last



Abbott Steel Bearing Balls are made in all sizes from  $\frac{1}{16}$ " to  $\frac{1}{2}$ ". We have perfected special machinery that enables us to make the most highly accurate balls ever produced. Furnished in any grade desired, and *all absolutely accurate.*

*Send in your specifications and let us quote*

### The Abbott Ball Company

Elmwood District, Hartford, Conn.



## Pattern Shop Machinery

Special Prices if you refer to this ad.



### Band Saws

Chicago No. 00 27 in. Wheels

" No. 0 32 " "

" No. 1 36 " "



### Saw Tables

Chicago No. 5 Stationary Table

" No. 9 Tilting Table

" No. 10

Boring attachment if wanted.



### Jointers

8 in., 5 and 6 ft. tables and guard.  
12, 16, 20, 24 and 30 in., 7 ft. tables  
and guard.

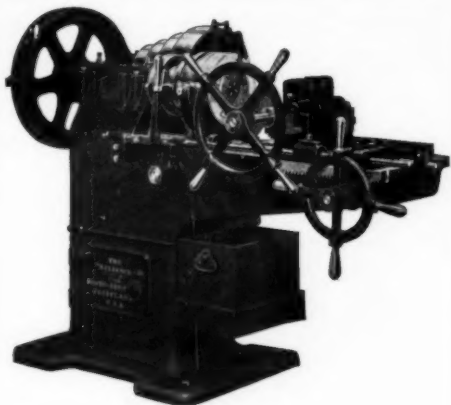
Trimmers, Lathes, Core Box Tools, etc.

*Ask for full descriptions*

### Chicago Machinery Exchange

1214-1228 Washington Boulevard, Chicago





## Reliance Bolt Cutters

Built in sizes  $\frac{3}{4}$  inch to 6 inches, Single, Double and Triple, of the most up-to-date design. There is, also, a good reason why the "Reliance" is such a satisfactory machine for accuracy of threads cut, large production and low cost of maintenance, even in the hands of inexperienced labor. A lot of this reason is in the Opening Die Head, and we would like to tell you all about it. Interesting information for the asking.

**The Foote-Burt Co., Makers**  
Cleveland, Ohio

## Are You Paying for a Canton Crane Without having one



Canton Cranes  
can be  
furnished with  
Double Gears,  
when desired,  
at a small  
extra cost.

When you have a heavy lift to set will you call six men from their work to assist when it is only a one man job with the "Handy Tool"? Are you paying for this extra labor—which in one year amounts to several times the cost of this Hoist? In other words, are you paying for a CANTON Crane without being able to use it?

### The "Handiest Tool in the Shop"

goes quickly where nothing else can reach—it makes one man's time worth six and no matter how well you are equipped, it is bound to speed up your production. Catalog E-8 gives you interesting facts.

*Write for it*

**Canton Foundry & Machine Co.**  
Canton, Ohio

**"Standard" Portable Electric  
Drills, Reamers and Grinders**  
High-Power, High-Production, Durable

We manufacture a  
full line of  
Universal

Drills and Grinders  
that run on both  
A. C. and D. C.



All Tools Are  
Ball-Bearing

Best Imported  
Bearings Used

"Standard" High-Power Universal Drills and Grinders are tools of the highest power and greatest durability, without increasing weight. They are handy, economical, simple and fool-proof.

"Standard" motors are insulated and impregnated with a special process. They are guaranteed not to run hot under the hardest continuous service. This safeguards against overloads and burn-outs, and enables the user to "speed up" and increase production.

**Order a "Standard" on Trial**

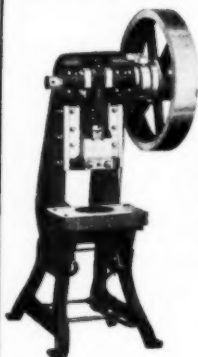
*Also write for New Bulletins and Circular on Tests*

Ask us  
for list  
of users

THE  
**STANDARD**  
ELECTRIC TOOL CO.  
CINCINNATI, OHIO, U. S. A.

New York  
Office:  
30 Church St.

# YOU WILL LOOK



Long and Far before you  
find a press that will turn  
out work like

HIGH DUTY  
**ROCKFORD**  
PUNCH PRESSES

Power is concentrated into  
doing the work **quickly**  
and **cheaply**. Friction is  
cut  $\frac{1}{2}$  and speed increased.

*You get more work at less  
cost. Investigate these  
profit boosters.*

**The Rockford Iron Works**  
Rockford, Ill.

## The "Quickwork" Edge Turner

For turning edges on fenders, shields,  
aprons, tanks, or any other parts made  
of sheet metal up to No. 16 gauge.

No matter what your work of this  
kind may be, we can furnish the rolls  
that will adapt the machine to your  
particular requirements—also with  
beading, crimping and flanging rolls,  
and rotary cutters for shearing metal.  
This machine is a wonderful cost-  
reducer, while increasing production  
and improving the quality of the product.

Every up-to-date sheet-metal-work-  
ing plant should be posted on our  
modern Edge-Turning Machine, as  
well as on our "Quickwork" Rotary  
Shears, Power Beaders, Beading and  
Bending Machines, Power Ham-  
mers, etc., etc.

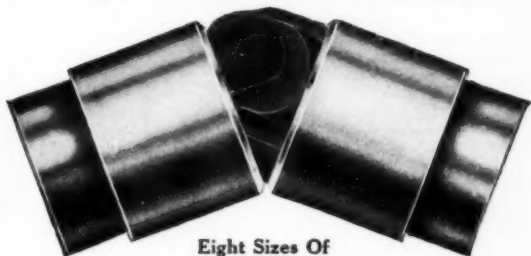
*Put your sheet-metal-working prob-  
lems up to us. We are experts. And  
write now for "Quickwork" catalog.*



**H. Collier Smith, 815 Scotten Ave., Detroit, Mich.**

# Compact Angular Drives

Of Great Strength and Durability



Eight Sizes Of

## Universal Joints

From  $\frac{1}{2}$  inch to  $2\frac{1}{2}$  inches, varying by quarters of an inch, are carried in stock

They transmit a thrust or tension without play or looseness in any direction.

All wearing parts are thoroughly case-hardened.

They have no sharp edges to wear other parts.

They have no screws or small parts to get loose.

They have been thoroughly tested during years of satisfactory service in this country and abroad.

Tell us size of shafts to be connected, r. p. m. of joint, angle, h. p. to be transmitted, and tool or machine you wish to drive, and let us recommend a Universal Joint suitable for your purpose.

*Tell us your needs; then it's up to us*

**GRAY & PRIOR MACHINE CO., Hartford, Conn.**

## Safety

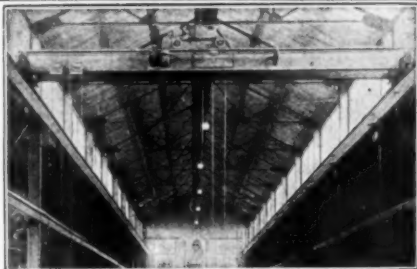
Recent experiments demonstrate that safety collars are not sufficient protection for the grinding wheel operator, and the use of proper Protection Hoods is strongly recommended. It will pay you to know more about

**Valley City  
Adjustable Protection  
and Exhaust Hoods.**

They are applicable to any make of machine. Write today for circular and quotations.

**Valley City Mche. Wks.**

Campau & Fulton Sts.  
Grand Rapids, Mich.



## Floor Operated Electric Traveling Cranes

do not require an operator in constant attendance and are frequently as well or better adapted for handling material than the more expensive cab operated.

We make all types of overhead cranes and hoists.

**The Euclid Crane & Hoist Company**  
Euclid, Ohio

# Harden Every Die and Tool Perfectly!

¶ You can do it in a Hoskins Electric Furnace. By its perfect control you can get exactly the right heat for maximum hardness and life. Its freedom from air blast and combustion gases prevents scale and soft spots. And its absolutely uniform heat eliminates warpage and breakage.

¶ Other facts about Hoskins Electric Furnaces are told in our interesting bulletins—No. 8 on Carbon Steel Furnaces and No. 10 on High Speed Steel Furnaces. Either or both, yours for the asking.



Write today to

## HOSKINS MANUFACTURING COMPANY

*Electric—Furnaces, Pyrometers and Heating Appliances*  
*"International" Ammeters and Voltmeters*

**461 Lawton Avenue, DETROIT**

Otis Bldg.  
CHICAGO

Oliver Bldg.  
PITTSBURGH

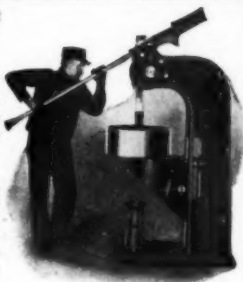
30 Church St.  
NEW YORK

Canadian Factory: Canadian Hoskins, Ltd., Walkerville, Ont.

Built so powerfully that they produce the work quicker, cheaper and better.

Superior to any other machine for pushing in bushings, broaching, bending, straightening, punching and many of the other uses found in all machine shops.

The Eames Compound Leverage System permits the operator to readily change from simple leverage to one having **5 TIMES AS MUCH FORCE!**



Indispensable in an up-to-date machine shop and for automobile factories and repair stations. Get full information at once.

## **Atlas Press Co.**

313 N. Park St.

Kalamazoo, Mich., U.S.A.

For sale by leading dealers everywhere.

## **Lourie Manufacturing Co.** Springfield, Ill.



**Type "B"**

Make many styles and sizes of  
Vertical and Horizontal

## **Hydraulic Forcing Presses**

*Hand or Power*

*Write for  
Circulars  
and  
Prices*





# Tucker's Safety First



Closed

**Oil Hole Covers**  
Require but one hand to pump in the oil. Adapted to all kinds of mechanism having oil holes leading to a bearing.

*Send for Catalogue  
Oil Hole Covers  
and Compression  
Grease Cups*



Open  
Style A

Style E



Style C



Style F, Drive



Style D



Compression  
Grease Cup

Style B



Open



Closed



Rotary Head

**W.C. & F.C. TUCKER, Hartford, Conn.**

## Steel Handles



For Power Tools, etc.

We can save you money.

*The Price*, on account of quantity production, is below the manufacturing cost of cast iron or forged handles.

*In Quality* there is no comparison. They are accurate, highly finished, and ready to attach. Let us show you.

*Write for Catalog of Standard Handles, prices and discount.*

**The Cincinnati Ball Crank Co.**  
Oakley, Cincinnati, Ohio



## Find Out!

### Vulcanized Fibre for Machine Parts

may be much better and cheaper than the materials you are using, and it's worth investigation.

*Let us figure on these parts for your machines:*

Gears  
Frictions  
Washers

Bushings  
Thrust Washers  
Guide Collars

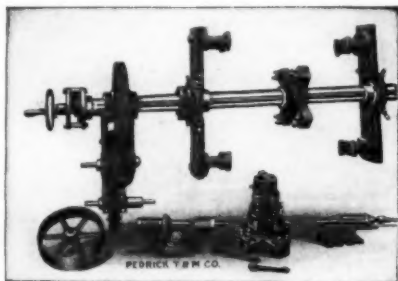
Discs  
Handles  
Etc., Etc.

*Or send us blue prints or samples of special parts.*

Write for Catalog, which tells the story of the original Vulcanized Fibre and its uses, and contains price list on stock parts, sheets, tubes and rods.

**American Vulcanized Fibre Co.,** Wilmington, Delaware.

## Headquarters For Portable Boring Bars



Since the time Portable Boring Bars were first manufactured the Pedrick name has been intimately connected with them, and this association has been the means of making every improvement that is in evidence today on our type of machine.

For convenience, accuracy and durability you will find our equipment more than satisfactory and capable of saving time and money in such measure that the cost is largely returned at every using.

*Write for a bulletin on this tool and our others:*

Pipe Benders, Portable Millers, Crank Pin Turners, etc.

### **Pedrick Tool & Machine Co.**

3644 N. Lawrence St., Philadelphia, Pa.

# Well Dressed Letters

## Have the Greatest Selling Force

The days of the showy salesman are about over, and the days of the shabby salesman have never dawned.

The modern efficient salesman is a man of force, and his well-ordered apparel reflects the well-ordered brain.

## Steel Die Embossed Stationery

### Is to the Letter what Good Clothes are to the Salesman

It does not lend itself well to the circus-poster style, nor is it ever shabby. It has that rich, neat appearance which at once gives the impression of solidity behind it.

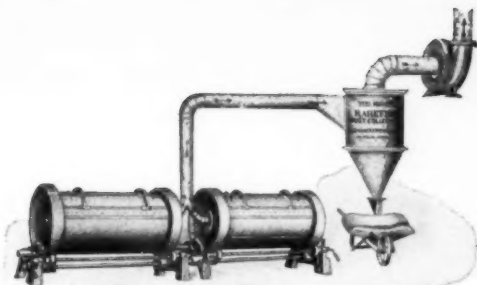
You cannot use well-dressed salesmen to see *every* prospective customer. It is left to your *letters* to make the desired impression in scores of places where an order is possible.

And what is there so impressive for that purpose as Steel Die Embossed Stationery?

*It is probably not as expensive as you think  
Write for free Specimen Book and prices*

**American Embossing Co.**

192-96 Seneca St., Buffalo, N. Y.



## Effective, Long Lived, Reliable

A Clean Factory at Lowest Expense

THE MORSE COLLECTOR does excellent work with the most troublesome dust—heavy, gritty or cutting, from emery wheels, sand blasts or tumbling mills.

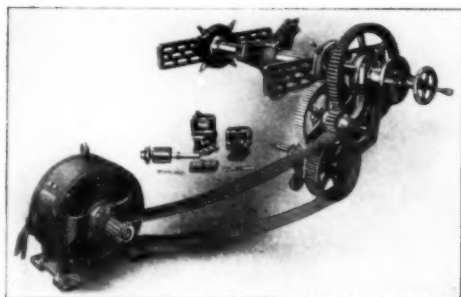
Being operated on the "rarefied" or partial vacuum principle, the air is drawn through the collector, not pushed through as in old style machines. Hence, the dust is removed before the air reaches the fan, and the latter is not worn out by the abrasion of fast-moving particles of grit and sand. This gives greater effectiveness, and makes the fan last indefinitely.

*Engineers of big plants favor the Morse  
It will help YOU reduce costs in 1915*

**The Knickerbocker Company**  
Jackson, Mich.

# Dozens of Labor Savers

Underwood's Portables Afford You  
A Wide Choice of Excellent Tools



THIS BORING BAR, driven with motor and silent chain, does accurate work on all kinds of engines, pumps, air compressors, steam hammers, valve seats, etc. Readily operated in a space which allows the taking of the piston out of the cylinder. Often returns its cost in the amount saved on one job.

## **Our Line of Portable Tools includes**

circular planer tools; radius and rotary planers; machines for truing eccentrics, facing domes, arms for facing cylinder flanges; crank pin turners; motors; rotary flue cleaners; pipe benders; rail saws; armature and axle bearing borers, etc.

*They should have a place on your 1915 schedule*

L. B. Flanders Machine Works (Est. 1870)

**H. B. Underwood & Company**  
1016-22 Buttonwood St. Philadelphia, Pa.

## Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for.

Write directly to the parties offering the machines for sale for prices and full descriptions. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

### FOR SALE BY

**Linderman Machine Co.,** - - - **Muskegon, Mich.**

#### PATTERNMAKERS DISC GRINDER.

We offer at a bargain a latest type Besly No. 15 grinder, which has had less than two weeks actual operation. Machine is exactly as good as new, with full equipment, countershaft, etc.

### FOR SALE BY

**New Haven Manufacturing Co.,** **New Haven, Conn.**

We have for sale the following second-hand tools, which are now in use, of modern type and in first class condition, with full and complete equipment:

Boring mills, vertical, 42, 44, 52, and 60", with two heads.

Drills, upright, 28" and 40".

Lathes, 18" to 28" swing, 8' to 14' long.

Planers, 24, 28, 34 and 40" square, 6' to 30' long.

### FOR SALE BY

**Chas. Molitor Machinery Co.,**

**215 S. Clinton St., Chicago, Ill.**

Arch press, 48", double crank, hvy.

Boring mill, 32" Flather.

Broaching machine, No. 4 Lapointe.

Draw presses, Bliss, Ferracute, (4).

Drill chucks, \$5,000 worth, 5-32 to 1".

Fox turret lathes, (10).

Keyseater and slotter.

Lathe, 30"x26" Ames.

Lathe, 20"x10" Springfield.

Lathe, 20"x10" Walcott.

Lathe, 33"x12" Prentiss.

Planers, 6' to 12', (3).

Press, geared, Waterbury-F., 4" str.

Press, arch, 30" Bliss.

Press, notching, American Can Co.

Radial drill, 32" Fostick.

Shaper, traveling, 4'.

Shapers, 14" to 32", (8).

Square shears, 1-16", 6-8'.

Turret lathes and screw machines,

Warner & Swasey and Acme,

4-24" (12).

Tinners' rollers, brakes, shears, punch presses and compressors.

100 other iron and woodworking machines, motors, etc.

### FOR SALE BY

**Brown-McDonald Machinery Co.,**

**906-908-910 North Market Street, - - - St. Louis, Mo.**

#### LATHES.

11"x4' Sebastian, foot power.

14"x5 Star.

14", 16" & 18" Monarch, new, (5).

16"x 6' Hamilton.

22"x 8' New Haven, comp. rest.

Speed lathes, all sizes, (5).

#### DRILLING MACHINES.

20" Silver and Champion, new, (3).

3 spindle Reed sensitive, cap. 1/4".

26" Barnes, b. g., p. l., with tap. att.

32" City Fdy., b. g., sliding head.

36" Gang radial.

50" Sellers, b. g.

#### PLANERS.

30"x30"x9' New Haven.

24"x24"x1' Niles.

#### MISCELLANEOUS.

Brake, 10' Robinson, cap. 16 gauge.

Hammer, air cushion, 90-lb belt dr.

Presses, Nos. 37, 35 and 33 Swaine.

Shear, power square, 8' Berth, 16" gauge cap.

Large stock of Emery Grinders, Blowers, Punch & Shears, etc.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Motch & Merryweather Machinery Company,**

**707-715 Lakeside Av., N. W.,**

**Cleveland, Ohio**

**Branches: Detroit, Cincinnati, Pittsburg.**

#### BORING MACHINES.

Lucas 2" bar, cone drive, belt feed.  
Lucas No. 21, cone drive, geared fd.  
6" horizontal Niles, table type.  
Bement-Miles 4" bar, table type.

24" & 36" Bullard, v. t. l.  
34" Colburn, 3-jaw chuck.  
42" Colburn, 2 swivel heads.  
72" Pond, friction feed.

#### DRILLS, MULTIPLE.

8-spindle Baush, 1/2" capacity.  
No. 43 Gardam 8-spindle, 1/2" cap.  
3-spindle No. 1 Avey ball bearing.

8-spindle Moline rail drill, 1/2" cap.  
10-spindle Baush multiple, 1/2" cap.

#### DRILLS, UPRIGHTS.

28" Baker, style "F".  
No. 1 Baker, standard.  
20" Barnes, all geared.  
20" Aurora, wheel and lever feed.  
20" Mechanics wheel and lever. 2 sp.

24" Cincinnati, sliding head.  
32" Cincinnati, sliding head.  
34" Barnes, sliding head.  
40" Aurora, sliding head.

#### DRILLS, RADIALS.

2 1/2' & 2' Fosdick plain, cone drive.  
3' Drees & Mueller, cone gear fd.  
4' Baush, radial.

4' Fosdick radial, gear drive.  
4' Pond heavy plain, cone drive.  
8' Niles.

#### DRILLS, SENSITIVE AND MULTIPLE.

10" sensitive plain. Myers.  
10" Barnes, friction.  
12" 4-spindle Barr, sensitive.  
4-spindle Pratt & Whitney sensitive.  
14" Foote-Burt, 2-spindle sensitive.  
14" Foote-Burt, 8-spindle sensitive.

14" Taylor & Fenn, sensitive, sgl. sp.  
15" Barnes, friction drive.  
6-spindle Kern, ball bearing.  
6-spindle Kern, with tapping attachment, ball bearing.  
8-spindle Leland, ball bearing.

#### GEAR CUTTERS.

26" Brown & Sharpe, plain spur.  
23" Gould & Eberhardt, spur.  
36" Gould & Eberhardt, spur.  
40" Flatier, spur.

48x12 Gould & Eberhardt, spur.  
60" Gould & Eberhardt, spur.  
24" Fellows gear shaper.  
36" Fellows gear shaper.

#### HAMMERS.

400 lb. Morgan, single frame.  
2000 lb. single frame Bement-Miles.  
3300 lb. single frame Bement-Miles.

1500 lb. Bement Miles, 2 machines.  
600 ton steam hydraulic press, Alliance Machine Co.

#### GRINDERS.

No. 1 Leland & Falconer, wet tool.  
No. 2 Worcester drill grinder.  
No. 11 Brown & Sharpe, plain.  
6"x32" Norton plain grinder.

Nos. 200 & 210 Heald ring grinders.  
No. 3 LeBlonde univ. tool & cutter.  
No. 3 Oesterlein universal grinder.  
10"x36" Landis, plain grinder.

#### LATHES.

6"x30" Cataract bench lathe, complete with bench and all equip.  
11x4 Blount speed lathe.  
13x5 Blount speed lathe.  
10"x5" Pratt & Whitney, tool room lathe, complete.  
12"x5" Miami Valley, complete.  
12"x5" Hendey, tool room.  
12"x6" Willard compound rest.  
14"x8" Prentice, compound rest.  
14"x8" Prentice, rise and fall rest.  
14"x6" Hendey, taper attachment.  
16"x6" Flatier, taper attachment.  
16"x6" Davis, compound rest.  
16"x6" LeBlond, compound rest.  
16"x6" L. & S. patent head, c. rest.  
16"x8" Flatier.  
16"x8" Hendey, taper att., c. rest.  
16"x10" LeBlond, compound rest.  
20"x10" Bradford.

16"x10" Bradford, q. c. g., taper att., chuck for relieving att. and collet.  
18"x8" Fay & Scott, Flatiers, Davis, Walcott & Wood, Reed and Bradford, compound rest.  
20"x12" Reed, compound rest.  
20"x12" Johnson.  
22"x12" Pond.  
22"x16" Pond.  
36"x20" Niles, triple geared.  
38"x24" Pittsburg, triple geared.  
39"x9" Roll lathe.  
50"x18" Fifield, c. r. triple geared.  
52"x36" Hewes & Phillips, tri. grd., c. r. arranged for crankshaft turning.  
64"x43" Hewes & Phillips, comp. rest, taper attachment, triple geared, arranged for crankshaft work.  
64"x43" Roach, c. rest, triple geared.



## SECOND-HAND MACHINERY

**Motch & Merryweather Machinery Co.,—Continued.**

### CENTERING MACHINES.

3" Binghamton.

### MILLING MACHINES.

No. 13 Pratt & W. Lincoln type.  
No. 32 Kempsmith, Lincoln type.  
No. 2 Brown & Sharpe, universal.  
No. 24 Le Blond pl., all power feed.  
No. 3 Le Blond, a. p. f.

6" Winton, double spindle.

No. 2 Brown & Sharpe, pl., cone dr.  
No. 12 B. & S. Lincoln type.  
No. 13 B. & S. Lincoln type.  
No. 6 Whitney plain hand miller.  
No. 4 Blake & Johnson vertical.

### PLANERS.

16"x16"x4' Hendey.  
22"x22"x4' New Haven.  
22"x22"x7' Gray.  
24"x8' Gray planer new.  
24"x24"x8' Powell.

28"x5' New Haven.  
30"x30"x10 Whitcomb.  
60"x18' Pond, double head.  
72"x24' Pond, double head.  
12"x26' Pond, four heads.

### SHAPERS.

14" Steptoe, single geared.  
15" Hendey friction.  
18" Steptoe, single geared.  
20" Kelly, back geared crank.  
20" Smith & Mills, dbl. grd., crank.

22" Smith & Mills, shifting belt.  
24" Hendey, friction.  
24" Walcott, shifting belt.  
34" Gould & Eberhardt, crank.

### SLOTTERS.

54" Hewes & Phillips.  
52" Hewes & Phillips.

30" Pond.

### TURRET LATHES & SCREW MACHINES.

1" Pratt & Whitney, with cut-off rest and automatic chuck.  
3"x4" Brown & Sharpe turret.  
No. 2 B. & O., w. f., auto. chuck. (2).  
No. 2 W. & S., w. f., auto. chuck.  
No. 2 Bardons & Oliver, turret. pwr. feed to turret slide.  
No. 2 Brown & Sharpe, standard screw machine.

3"x36" J. & L. sliding hd. tur. lathe.  
14" Dreses, wire fd. screw machine.  
24" Davis chucking machine.  
21" Gisholt turret lathe.  
No. 2 Foster pl. head turret lathe.  
1"x2" Acme screw machine.  
2"x24" Jones & Lamson flat turret lathe, cone head.  
24"x10" L. & S. screw machine.

### AUTOMATICS.

Gridley automatic piston ring mch.  
14" late type Gridley.  
24" Gridley.  
6" Cleveland automatic.  
8" Acme automatic.

14" Cleveland automatic.  
14" Cleveland automatic.  
24" Cleveland automatic.  
6" Cleveland auto., standard model.

### MISCELLANEOUS.

Band saw, wood, 36".  
Centering machine, 3" Binghamton.  
Centering mch., 6" Whiton, 2 spdl.  
Cold saw, 50" Espen-Lucas.  
Cut-off mch., 24" Hurlbut-Rogers.  
Cut-off mch., 34" Hurlbut-Rogers.

Cut-off mch., 3" Pratt & Whitney.  
Disc grinder, 18" W. & P., dbl. end.  
Keyseater, No. 6 Baker.  
Keyseater, No. 6 Mitts & M., 4" cap.  
Keyseater, 18x1 1/2 Morton.  
Shears, 36" Toledo, power, 4" cap.

## FOR SALE BY

**McCoy & Brandt, - - 410 House Building, Pittsburgh, Pa.**

Good used equipment.

Boring & facing mch., No. 5 Barrett.  
Boring mill, vert., 53" Colburn.  
Bulldozers, Nos. 3.5 and 7. W. W. (3).  
Cranes, one 15-ton, one 10-ton, 220 v., d. c.  
Crane, 40-ton, 60' span, 220 v., d. c.  
Generators, 75 k. w. 250 v., d. c., connected to vert. cross c. steam eng. (2).  
Hammers, board drop, 1,000 1,200, 1,600 and 2,000 lbs. (4).  
Hammers, steam, 300 to 6,000 lbs. (5).

Heading & forging mchs. 1 1/2", 3" (2).  
Lathes, Lodge & Shipley, patent hds. 18"x8", 24"x16" and others. (2).  
Millers, Cincinnati Nos. 2, 3, 4, (3).  
Motors, 1 to 75 h. p. a. c. and d. c. (20).  
Presses, Toledo Nos. 56.57.76.63, (6).  
Presses, Bliss Nos. 73 1/2, 74 1/2, 75 1/2, (7).  
Radial drill, 5" Bickford, plain.  
Shears, alligator, 14", 3" & 5" gap. (3).  
Shear, guillotine type. cap. 5 1/2"x5".  
Shear, gate, 10" Cincinnati, 4" plates.

Partial List. Details upon request.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Toledo Electric Welder Co.,** - **Knowlton & Langland Sta.,**  
**Cumminsville, Cincinnati, Ohio**

Grindstone, 30" Athol, with frame.  
 Hammer, power, Kaufman.  
 Jointer, 24" Crescent, with countershaft, wrenches, etc.  
 Patternmakers' benches, 10', equipped with Massey vises, tables 2" maple  
 with iron stands, (3).  
 Saw table, Colburn No. 263, complete.  
 All above nearly new, and will be sold at attractive prices to move them.

### FOR SALE BY

**W. L. Perkins Machinery Co.,** **30 Church St., New York**

#### LATHES.

9"x5' Star, plain and comp. rest.	16"x8' Reed, compound rest.
12"x5' Young, compound rest.	18"x8' Hamilton, compound rest.
14"x8' Sebastian gap lathe, c. rest.	18"x10' Rahu-Carpenter, comp. rest.
16"x6' Hamilton, compound rest.	20"x10' Putnam, compound rest.

#### MISCELLANEOUS.

Boring mill, 30" Bullard, tur. head.	Pipe machine, 34" Saunders.
Key seater, No. 1 Baker Bros.	Screw mche., No. 2 W. & S., wire fd.
Milling mche., No. 1 1/2 Garvin univ.	Planer, 24"x24"x6' Pond.
Milling mche., No. 3 Becker-B univ.	Shaper, 14" Juengst, horiz., crank.
Milling mche., No. 2 B. & S. univ.	Shaper, 12" Walcott, geared.

### FOR SALE BY

**A. D. White Machinery Co.,** - **108-114 N. Jefferson St., Chicago**

#### LATHES.

13"x 5' P. & W., taper and chucks.	28"x12' Fifield.
15"x 8' Von Wyck.	28"x25' Putnam.
16"x 6' Fay & Scott.	30"x18' Reed.
24"x10' Lodge & Shipley, q. c.	

#### DRILL PRESSES.

14" Barr sensitive, (3).	30" Bickford radial.
28" Bickford, sliding head.	36" American radial.
30" Kerkhoff, sliding head.	36" Mueller radial.
32" Bickford, sliding head.	40" Aurora radial.

#### PLANERS.

24"x 6' Pond.	32"x 8' Betts.
26"x 8' Gray.	35"x12' Niles.
28"x 8' Gray.	38"x10' Gray.

#### SCREW MACHINES AND TURRET LATHES.

16" No. 3 Pearson screw machine.	No. 2 Garvin screw machine.
No. 2 1/2 P. & W. screw machines, (2).	13" Dreses turret lathe.
1 1/2" Cleveland automatic.	22" Lodge & Shipley turret lathe.
1 1/2" Pratt & Whitney automatics, (4).	21" Gisholt, big bore.

#### PUNCH PRESSES AND SHEARS.

No. 2C Ferracute.	No. 45 Crosby, open back.
No. 16 Wold.	No. 3 Ferracute, double action.
No. 4 1/2 R. & K., o. b. i.	42" Niagara power sq. shear.
No. 5 Niagara, o. b. i.	52" Niagara power sq. shear.

#### MISCELLANEOUS.

Blowers, No. 1 Garden City, (2).	Miller, No. 12 Garvin plain.
Bolt cutter, 1 1/2" National.	Miller, No. 24 Oesterlein univ.
Bolt cutter, 3 1/2" National.	Miller, No. 9 Kempsmith plain.
Grinder, cutter, H. G. Barr.	Miller, manufacturing, Grant.
Grinder, Yankee drill, style "B".	Pipe machine, 2" Jarecki.
Grinder, disc, No. 1B Besly.	Shaper, 16" Smith & Mills.
Hammer, power, 50 lb. Dienelt.	Shaper, 24" Gould & Eberhardt.
Keyseater, 16" Morton, portable.	Tapper, No. 2 Garvin horizontal.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Marshall & Huschart Machinery Company,**

**Chicago**

**Indianapolis**

**St. Louis**

#### BORING MACHINES.

- Lucas & Gleim horizontal, 24" spindle.
- No. 2 Barnes horizontal.
- 48" Barrett cylinder borer.
- 48" Swing car wheel borer, for 36" wheels.
- 30" Bullard vertical, belt feed.
- 30" Bullard vertical, geared feed, thread cutting.
- 34" King vertical, three-jaw chuck.
- 37" Baush, 2 swivel heads.
- 42" Bullard, swivel turret head, thread cutting.
- 52" Rogers & Hemphill, two swivel heads.

#### DRILLING MACHINES.

- 19 1/2" Putnam, power feed, automatic stop.
- 23" Rockford, stationary head, back geared.
- 24" Mechanics, sliding head, back geared and power feed.
- 32" Hamilton, sliding head, back geared and power feed.
- 34" Lodge & Davis, sliding head, back geared and power feed.
- 42" Barnes, sliding head, back geared and power feed.
- Two-spindle Rockford 14" manufacturers' gang.
- Three-spindle Rockford 20" manufacturers' gang.
- Four-spindle Foote-Burt gang.
- Ten-spindle Natco multiple, capacity ten 5-16" drills.
- Twelve-spindle Western multiple.

#### RADIAL DRILLS.

- 24" Gang, plain, cone drive.
- 36" Bickford plain.
- 44" Alfred Box plain.
- 5" Western full universal, gear box drive.

#### GEAR CUTTERS.

- 18" Brainerd, spur and bevel.
- 24" Gould & Eberhardt, spur and bevel.
- 30" Flather, spur gear.
- 30"x7" Gould & Eberhardt, spur gear.
- 36"x10" Gould & Eberhardt, vertical cutting type, spur gear.

#### ENGINE LATHES.

- 14"x6" Whitcomb-Blaisdell, with taper attachment.
- 16"x6" American, qk. chg. gears, rev. att., taper att., draw-in chuck & collets.
- 18"x8" Lodge & Shipley, quick change gears.
- 20"x10" Flather, compound, rest.
- 26"x14" Star, compound rest.
- 36"x40" Niles, two steady rests, bed two sections.

#### MILLING MACHINES.

- |                                    |                                   |
|------------------------------------|-----------------------------------|
| No. 3 Owen plain.                  | No. 24 Oesterlein full universal. |
| No. 2 Cincinnati plain, cone type. | 22"x22"x12" Newton slab miller.   |

#### PLANERS.

- |                                  |                       |
|----------------------------------|-----------------------|
| 22"x22"x5" Pond, parallel drive. | 30"x30"x8" American.  |
| 24"x24"x6" New Haven.            | 36"x36"x10" American. |

#### SHAPERS.

- |                                    |   |
|------------------------------------|---|
| 17" Hendey, friction clutch drive. | 26" American, tri. grd., shifting belt. |
| 20" Rockford, back geared crank.   | 26" Walcott, shifting belt.             |
| 24" Smith & Mills.                 | 34" Walcott, geared, shifting belt.     |

#### MISCELLANEOUS.

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| Bolt cutter, 2" National, motor dr. | Tapping mch., 4" Baker Bros. F-III. |
| Broaching machine, Knowles.         | Tapping mch., 10" Baker Bros. K-II. |
| Riveter, 3-16" Chuster.             | Tooth rounding machine, S. & S.     |

Send for complete descriptions. We have many others. Write us for what you need.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Niles-Bement-Pond Company, . . . 111 Broadway, New York.**  
**Located at Chicago, Boston and New York.**

Send for Catalogue No. 18.

#### LATHES.

13x6 P. & W., r. & f., taper.  
 14x10 P. & W. c. r., taper.  
 15x7 speed lathe.  
 16x10 P. & W., r. & f. & t.  
 18x6 Pond, turret tool post.  
 18x7 Pond, turret tool post.  
 19x8 Pond, compound rest.  
 20x10 Flather, c. r.  
 20x14 Le Blond c. r., taper.  
 22x12 Niles, with taper.

22x22 Niles.  
 28x12 Pond, compound rest.  
 30x16 Pond, compound rest.  
 32x12 Pond, compound rest.  
 36x14 Niles, compound rest.  
 36x17 Pond, 220 v. motor drive, taper.  
 40x16 Bement, b.g., not screw cutting.  
 42x22 Niles, comp. r., tri. grd.  
 42x30 Putnam, comp. r., tri. grd.  
 44" P. & W. pulley lathe.

#### SCREW MACHINES, TURRET LATHES, ETC.

No. 3, 2 15-16" Niles screw mche.  
 2x24 Jones & Lamson.  
 2x26 P. & W. piston and piston ring equipment.  
 21" Gisholt, turret.  
 24-27 Conradson semi-automatic turret, 2 3-16" hol. sp.  
 28" Milwaukee turret, 4 1/2 in. hol. sp.

1" Hartford, automatic pin machine.  
 1" P. & W. automatic screw mach.  
 1" P. & W. 2 sp. automatic screw machine.  
 1" Acme old style 4-sp. automatic.  
 1" single turret Spencer automatic.  
 21-32" No. 2 Brown & Sharpe automatic screw machine.

#### BORING MACHINES.

30" turret hd., b. & t. mill, Colburn.  
 37" Niles, b. & t., 2 heads.  
 5' Niles, 2 heads.  
 6' Pond, 2 heads, with slotting att.  
 7' Niles, 2 heads.  
 10' Niles, 2 hds. 220 v., motor drive.  
 10-16' Niles b. & t., 2 heads.

10-16' Bement, 220 v., d. c., motor dr.  
 2" sp. Kelly hor. bor. and drill.  
 3 1/2" sp. Bement hor. bor. & drill.  
 5" sp. Niles, hor. bor. & drill.  
 96" swing x 16" centers bor. & facing; weight: about 43,000 lbs.

#### UPRIGHT AND SENSITIVE DRILLS.

13" 1 sp. sensitive, motor dr., 110 v.  
 10" 3 sp. sensitive, Slate.  
 10" 3 sp. sensitive, Sigourney.  
 2 spindle dbl. column sen., Langelier.  
 17" 4 sp. gang, Jones & L.  
 21" Aurora, b. g., p. f., sta. head.  
 20" sli. head, Gould & Eberhardt.  
 36" sliding head, Gould & E.

36" Aurora, sliding head.  
 3 sp. Niles rail drill, arrgd. for motor.  
 4 spindle Bement, multiple, 11' between housings.  
 No. 11 multiple drill, P. & W.  
 10 sp. adjustable R. & W., capacity 1 1/2" holes in 37" circles, belt or motor; weight: 30,000 pounds.

#### MILLERS AND GEAR CUTTERS.

No. 1 Duplex Van Norman.  
 24x7 table, plain, Becker.  
 No. 1 B. & S. plain, late model.  
 No. 1 1/2 Le Blond, plain.  
 No. 3 Le Blond, plain.  
 No. 4 Le Blond, plain.  
 43-9 1/2 No. 3 Cincinnati plain, b. g.  
 6x14 thread miller, P. & W.

No. 13 single spindle new model profiler, P. & W.  
 6x20 thread miller, P. & W.  
 36" spur and bevel, Gould & E.  
 36" spur gears, Pond.  
 36"x8" No. 3 B. & S., spur gears.  
 48"x16" No. 4 B. & S., spur gears.  
 72" spur gears, Niles.

#### RADIAL DRILLS.

4 1/2' semi-radial, Barr.  
 4' Niles, plain.  
 4' Niles, univ.  
 5' Niles, plain.  
 5' plain, motor, Pond.

5' 6" universal, Niles.  
 6' heavy plain, Pond.  
 6' 10" semi-universal, Niles.  
 7' 6" full universal, Niles.  
 Univ. portable radial, Prentice.

#### RAILROAD MACHINERY.

42" Niles heavy car wheel lathe.  
 46" car wheel lathe, Bement.

Bement and Niles dbl. axle lathes.  
 Putnam double axle lathe ex. heavy.

#### SHAPERS AND SLOTTERS.

10" crank shaper, P. & W.  
 10" crank shaper, Niles.  
 12" crank shaper, Bement.  
 18" double trav. head, Cincinnati.

20" Bement, 220 v. motor, traveling head, like new.  
 12" crank slotter, Bement.  
 14" crank slotter, Niles.

## SECOND-HAND MACHINERY

### Niles-Bement-Pond Company—Continued.

#### PLANERS.

22x22x6 Harrington.  
26x26x7 Niles, heavy type.  
26x23x16 Miles, 2 hds.  
30x30x6 Pond, 1 head.  
30x30x8 Pond, 2 heads.  
30x30x11 Niles, 1 head.  
30x30x24 Sellers, 2 hds.  
36x36x14 Pond, 4 heads.  
36x36x20 Pond, 3 hds.  
42x42x20 Miles, 3 hds.

48x48x12 Niles, 3 hds.  
48x48x16 Pond, 4 heads, heavy.  
48x48x20 Sellers, 3 hds.  
72x60x20 Niles, 2 hds.  
86x86x30 Pond, 4hds., revers. motor dr.  
96x96x30 Niles, 4 heads.  
10'x10'x30' Niles, 4 heads.  
10'x10'x36' Betts, 4 heads, 50 h. p.,  
220 v., motor drive.

#### MISCELLANEOUS.

Bar cut-off saw, 22" diam. blade.  
Cut-off machine, 2½ in. P. & W.  
Cut-off machine, 4½ in. Starr.  
Grinder, wet tool, Gisholt.  
Grinder, drill, 3 in. Sellers.

Grinder, plain, 5x32 in. Landis.  
Grinder, univ., 10x30 Landis.  
Grinder, 12x¾ in. Springfield.  
Saw grinder, automatic.

### FOR SALE BY

Vonnegut Machinery Co., 121 S. Meridian St., Indianapolis, Ind.

#### LATHES.

13x6 Willard.  
14x6 Lodge & Shipley.  
15x6 Sebastian.  
16x6 Von Wyck.  
16x8 Lodge & Shipley.  
16x8 Greaves-Klusman.  
18x8 Greaves-Klusman.

18x8 Lodge & Shipley.  
18x10 Lodge & Shipley.  
20x8 Lodge & Shipley.  
20x8 American.  
20x10 Reed.  
22x10 Reed.

#### TURRET LATHES AND SCREW MACHINES.

No. 0 Brown & Sharpe.  
14" Pratt & Whitney.  
16" Davis & Egan.  
16" Acme.  
No. 1 Bardons & Oliver.  
18" Lodge & Davis.

18" Bardons & Oliver.  
24" Davis.  
2x24 Jones & Lamson.  
3x36 Jones & Lamson.  
1½" Cleveland automatic.

#### MILLING MACHINES.

No. 40 Becker-Brainard, duplex.  
No. 2 Garvin, duplex.  
No. 2 Van Norman.  
No. 1 Kempsmith, universal.  
No. 2 Brainard, plain.  
No. 2½ LeBlond, plain.  
No. 1 Cincinnati, universal.

No. 2 Cincinnati, universal.  
No. 2 Kempsmith, plain.  
No. 1 Grand Rapids, plain.  
No. 6 Whitney, hand.  
No. 2 Garvin, Lincoln.  
No. 12 Pratt & W., Lincoln.

#### DRILLING AND TAPPING MACHINES.

12, 14 and 20" Rockford.  
15, 20 and 22½" Barnes.  
20" Cincinnati.  
25 and 26" Barnes.  
30" Lodge & Davis.  
3-spindle Baker.

4-spindle Gardam.  
6-spindle Quint, turret.  
4" Niles radial.  
No. 1 Garvin tapper.  
1, 2, 3, 4-spindle Barr.  
1, 2, 3, 4-spindle Reed.

#### GRINDERS.

10x20 Landis, plain.  
12x32 Landis, plain.  
12x42 Landis, plain.  
5x48 Pratt & Whitney, plain.  
No. 2 Modern, universal.  
No. 1 Norton, universal tool.

No. 3 Brown & Sharpe, tool.  
18" Gorton, disc.  
No. 20½ Heald, ring.  
No. 210 Heald, ring.  
No. 60 Heald, cylinder.

#### MISCELLANEOUS.

Gear cutter, 24" Becker-Brainard aut.  
Keyseater, No. 2 Giant.

Keyseater, No. 60 Baker.  
Shaper, 16" Rockford.

#### MOTORS.

5, 10, 25, 30, 35 h.p., 220 volt 60 cy., 3 ph. | 5 and 10 h. p., 220 volts, d. c.

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Osborne & Sexton Machinery Co., . . . Columbus, Ohio.**

#### LATHES.

13"x5' Reed, hollow spindle.	20"x12' cab. legs, rebuilt.
14"x8' thoroughly rebuilt.	21"x14' Fifeild.
15"x5' Putnam, compound rest.	18"x10' Pond, overhauled.
15"x5' Putnam.	28"-48"x13' centers, Harrington.
15"x6' Wood-Light, (2).	36"x14' Schumacher & Boye.

#### SHAPERS AND PLANERS.

16" Smith & Mills.	30" Morton, draw cut.
11" Gould Bros.	32x32x8' and 8' both Gray's.

#### TURRET LATHES AND SCREW MACHINES.

22" Fay chucking, q. c. (2).	16" Warner & Swasey, auto. chuck,
18" chucking lathe.	wire feed, (2).
15" American Fox.	12" Pratt & Whitney screw machine.
15" Pratt & Whitney turret.	Cleveland automatics, (3).

#### DRILLING MACHINES.

22, 24 and 30" Hamilton.	Footo-Burt 24" heavy duty.
4-spd. Niles, 2" capacity.	4-spindle sensitive gang, (2).
Footo-Burt 4-spd. multiple.	5' Universal radial.

#### MISCELLANEOUS.

Cold saw, Lucas, 8" stock.	Miller, No. 2 Kempsmith, div. hd.
Hammers, fric. bd., 3-0, 400 & 3,000 lbs.	Press, drawing, Q. & C. 4500 lbs.
Hammer, helve, 50 lb. Bradley type.	Press, o. b., No. 3 Crosby.
Keyseater, No. 3 Baker.	Rolls, Toledo, shovel blanking.

### FOR SALE BY

**Frank Toomey, Inc., . . . 127 N. Third St., Philadelphia, Pa.**

#### LATHES.

30"x22' Bement-Miles.	18"x14' Schumacher & Boye.
30"x18' Bement-Miles.	18"x10' Schumacher & B., taper att
28"x16' Fifeild.	18"x 8' LeBlond, turret attach.
27"x21' Pratt & Whitney, taper att.	18"x 8' Reed.
26"x17' Johnson, taper attachment.	16"x 6' Hendey-Norton, cone head,
26"x12' Fifeild.	taper attachment.
21"x 9' Lodge & Davis.	16"x6' Reed, taper attachment.
20"x12' Lodge & Davis.	14"x8' Hendey-Norton.

#### PLANERS.

60"x60"x14' Pond, two heads.	30"x30"x10' Bement-Miles, 2 heads.
60"x60"x14' Sellers, 4 heads.	24"x24"x6' Putnam
33"x33"x12' Woodward & Powell.	12" Moore crank planer.

#### SHAPERS.

20" Gould & Eberhardt.	16" American, back geared.
16" Smith & Mills.	12" Bement.

#### MILLING MACHINES.

36"x12' slab, heavy pattern.	No. 1 Brainard plain, table 12x48.
No. 20 Kempsmith universal.	Pratt & Whitney plain, table 55x5.
No. 3 Kempsmith plain.	No. 6 Whitney hand millers, (4).
No. 3 Becker-Brain'd pl., table 12x42.	

#### MISCELLANEOUS.

Bolt cutter, 1 1/2" National.	Drill, 26" Currier & S., slid'g head.
Boring mill, 72" Bickford, 3 heads.	Internal grind. lathe, 16x5 Diamond.
Boring mill, horiz., 48" Bement.	Pipe machines, 3" and 6" Curtis &
Boring mill, 36" Niles, 2 heads.	Curtis, hand power, (2).
Boring & turn. mill, 48" Sellers, 2 hds.	Presses, combined boring and wir-
Card cutting presses No. 103, (5).	ing, No. 22 Adriance, (3).
Hammer, steam, 350 lb. Bement-	Pulley boring machine, 60" Har-
Miles, single frame.	rington, upright.
Hammer, steam, 3,500 lb. Bement-	Shear, single end, 50" throat, 2"
Miles, double frame.	capacity, engine driven.
Hammer, board drop, 500 lb. P & W.	Turret lathes 1 1/2" and 2" Foster & K.
Dynamos, motors, engines and boilers.	Wood-working machines both new
and second-hand. Send for our stock books.	

## SECOND-HAND MACHINERY

### FOR SALE BY

**Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.**

#### BORING MILLS.

- |                                |                                       |
|--------------------------------|---------------------------------------|
| 36" Bullard, vertical, turret. | 62" and 86" Bullard, vertical, 2 hds. |
| 6" Pond, vertical, 2 heads.    | No. 2 Rockford, horizontal.           |
| 9" Pond, vertical, 2 heads.    | No. 3 C Binsse, horizontal.           |

#### DRILLING MACHINES.

- |                             |                                    |
|-----------------------------|------------------------------------|
| 1 spindle Reed sensitive.   | 25", 28" & 30" Snyder, sliding hd. |
| 3 sp. Avey, high speed.     | No. 1 Baker, high speed.           |
| 20" Prentice Bros. upright. | 60" & 48" Bement radials.          |
| 22" Aurora, sliding head.   |                                    |

#### GRINDERS.

- |                                |                                  |
|--------------------------------|----------------------------------|
| No. 60 Heald, cylinder.        | 6x32, 14x72 and 18x168, Norton.  |
| No. 3 Brown & Sharpe, surface. | No. 1 Brown & Sharpe, universal. |
| No. 210 Heald, ring.           | 24" C Bath, universal.           |

#### MILLING MACHINES.

- |                                       |                               |
|---------------------------------------|-------------------------------|
| Nos. 1, 1½ & 2 Cincinnati, universal. | No. 5 Brown & Sharpe, plain.  |
| No. 2-B Brown & Sharpe, pl. geared.   | No. 14 Garvin, plain.         |
| No. 1 Brown & Sharpe, univ.           | No. 24 Brown & Sharpe, plain. |
| No. 1 Milwaukee, universal.           | No. 4 Cincinnati, plain.      |

#### LATHES.

- |   |                                   |
|---|-----------------------------------|
| 9" Star, foot power.                                      | 18"x6" Reed, motor driven.        |
| 11"x5" Prentice Bros., c. r.                              | 18"x8" Prentice Bros.             |
| 14"x 6" Lodge & Shipley, compound rest, power cross feed. | 21"x14" Hendey, quick change.     |
| 16"x6" Lodge & Shipley, patent hd.                        | 21"x14" Porter, compound rest.    |
| 16"x8" Prentice Bros., compound rest, power cross feed.   | 22"x6" Reed, compound rest.       |
| 16"x8" Reed, c. r., p. c. f.                              | 26"x16" Pittsburgh, quick change. |
| 16"x8" Putnam, compound rest.                             | 26"x26" Newark, compound rest.    |
|   | 36"x12" Lodge & Shipley.          |
|   | 44"x18" Fifield, heavy.           |

#### PLANERS.

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 15"x15"x 3" Pratt & Whitney.      | 48"x48"x10" Powell, motor drive. |
| 30"x30"x10" Bement, 2 heads.      | 42"x42"x14" Woodward & Powell,   |
| 36"x36"x 8" Pond, 1 head.         | 4 heads.                         |
| 36"x36"x12" Lodge & Davis, 2 hds. | 60"x50"x10" Gray, 2 heads.       |
| 38"x38"x12" Gray, 2 hds.          | 71"x69"x14" Pond, 2 hds.         |
| 42"x42"x14" Pond, 2 heads.        | 84"x84"x20" Niles, 3 hds.        |

#### HAMMERS.

- |                           |                                 |
|---------------------------|---------------------------------|
| 125 lb. Fairbanks, power. | 1000 lb. Pratt & Whitney, drop. |
| 1200 lb. Billings, drop.  |                                 |

#### PRESSES.

- |                               |                             |
|-------------------------------|-----------------------------|
| No. 4 Mossberg & Granville.   | No. 2½ V. & O., inclinable. |
| No. C-82 Ferracute, notching. | E 12 Ferracute, inclined.   |

#### SCREW MACHINES.

- |  |                                   |
|--|-----------------------------------|
| 1x9 Pratt & Whitney, wire feed.        | No. 5A Potter & Johnston.         |
| 1"x10" P. & W., wire feed.             | 21" & 24" Gisholt.                |
| 1½"x9" Acme, wire feed.                | 24" American, heavy.              |
| 2x24 Jones & Lamson, bar and chucking. | Nos. 53 & 55 National-Acme auto.  |
| No. 2, 1" Garvin, wire feed.           | 23" & 34" Gridley auto.           |
| No. 2 P. & W., wire feed.              | 1, 1 & 2½" Cleveland auto.        |
| No. 2½ P. & W., wire feed.             | 1, 1 & 2½" Cleveland auto.        |
| No. 6½ Bardons & O., wire feed.        | No. 12, 4" B. & O., motor driven. |

#### SHAPERS.

- |                        |                        |
|------------------------|------------------------|
| 8" Gould & Eberhardt.  | 24" Gould & Eberhardt. |
| 16" Gould & Eberhardt. | 26" Gould & Eberhardt. |

#### MISCELLANEOUS.

- |   |                                       |
|---|---------------------------------------|
| Angle shear, 6" Hilles & Jones.                       | Pipe machine, 4" Saunders.            |
| Bolt cutter, 2" Acme.                                 | Pipe machine 6" Armstrong.            |
| Broaching machines, Nos. 3 and 4 LaPointe.            | Pipe machines, 3", 4" and 8" Jarecki. |
| Cold saw, 9" Fspen-Lucas.                             | Punch and shear, Hilles & Jones.      |
| Gas blowers, Nos. 1, 3 & 4 American.                  | Riveter, Greiner.                     |
| Gear cutters, 16", 24", 36" and 48" Gould & Eberhart. | Screw slotter, National-Acme.         |
| Gear cutter, 36" Cincinnati.                          | Slotters, 10" and 18".                |
|   | Stake riveter, 50" Rock River.        |

## SECOND-HAND MACHINERY

### FOR SALE BY

**The Seneca Falls Mfg. Co., 269 Water St., Seneca Falls, N. Y.**

#### LATHES.

12"x6' turret chucking lathe. 12"x6' speed lathes, (3).  
2"x24" Jones & L. flat turret, (2). 12"x7' speed lathes, (3).  
12"x4' speed lathes, (4).

#### MISCELLANEOUS.

Band saw, 25". Gear cutter, 30" Gould & Eberhardt,  
Elbow sander, hol. arm, No. 1 R. & H. with rack cutting attachment.  
Gas engine, 120 h. p. Alberger. Oil extractor, No. 2 National.  
Grinding wheel stands, 14" arbor, (3). Wood shaper, double spindle.

### FOR SALE BY

**Wayne Machinery Co., Taylor St. & L. E. R. R., Fort Wayne, Ind.**

#### RANDOM SELECTIONS

From our stock of over 700 machines.

Blower, No. 5 Sturtevant, cupola. Engine lathe, 18"x8' Standard.  
Bolt cutter, No. 50 Green River. Engine lathe, 34"x20' back geared.  
Boring mill, 34" Colburn. Hack saw, No. 4 Racine, h. s.  
Drill press, 20" Aurora, w. & l. Planer, 36"x26"x5' Standard.  
Drill press, 36" Aurora, b. g. Planer, 36"x36"x8' Powell.  
Engine lathe, 14"x6" Prentice. Punch & s. dbl. e., No. 19 Huntingt'n.  
Machine tools and pattern shop machines for every requirement.  
Write today for Wayne List, which fully describes our complete stock.

### FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,**

**210-212 Washington Ave., St. Louis, Mo.**

#### LATHES.

14"x 8' Von Wyck, quick change. 20"x 8' Whitcomb-Blaisdell.  
14"x 8' American, quick change. 80"x10' centers, heavy turning.  
14"x12' Lodge & Davis. 32"x10' Bradford.  
18"x 8' Rahn & Carpenter. 32"x19' American, quick change.  
18"x10' Porter.

#### SHAPERS AND PLANERS.

24"x24"x6' Lodge & Davis. 32"x32"x14' Niles.  
24"x24"x8' American. 36"x36"x8' Hamilton.  
24"x24"x8' Lodge & Davis, 2 heads. 44"x44"x14' Niles.  
28" American, back geared.

#### DRILLING MACHINES.

20" Barnes. 32" Aurora, sliding head.  
28" American, sliding head. 4' arm Fosdick.

#### BORING MILLS.

34" Gisholt, turret head. No. 1 Barret boring machine.  
36" two heads. 72" Niles Corliss engine cylinder  
72" Niles, one head. boring machine.

#### AIR COMPRESSORS.

6x6 belted. 10x10x10 steam driven.  
8x8 belted. 12x12x14 steam driven.  
9x9x9 steam driven. 500' and 1,000' steam driven.

#### MISCELLANEOUS.

Angle shear, dbl., size B, L. & A. Jack, hydraulic, 50 ton.  
Bending rolls, No. 14, cap. 98". Jacks, simplex, 12 and 15 ton.  
Bolt cutter, 14", double head. Miller, No. 34 Fox.  
Brake, No. 16 Robinson, cap 10'. Pipe machine, 4" Borden.  
Bulldozer, No. 4 Williams-White. Pulley lathe, 30" Stevens.  
Grinder, 10"x72" Landis. Punch press, heavy, dbl. housing.  
Grinders, surface, No. 2 Brown & S. Screw machine, automatic 9-16".  
Hammer, 100 lb. Bradley. Squaring shear, cap. 4" plates, 6'  
Hammer, steam, 350 lb. knife, 25" gap, with multiple punch-  
Hammer, steam, 800 lb. ing dies.



## SECOND-HAND MACHINERY.

### FOR SALE BY

**The H. A. Stocker Machinery Co., 566-72 W. Randolph St., Chicago**

#### LATHES.

- |                                    |                                   |
|------------------------------------|-----------------------------------|
| 7"x32" P. & W., c. r. and chucks.  | 18"x8' Reed, compound rest.       |
| 7"x32" Stark, c. r. and chucks.    | 18"x10' American, q. c. g.        |
| 12"x5' P. & W., tool wk.           | 18"x10' S. & B., with taper.      |
| 12"x6' Hendy, tool wk.             | 20"x8' Lodge & Shipley, d. b. g.  |
| 14"x5' P. & W., with taper.        | 20"x10' Cincinnati compound rest. |
| 15"x6' Von Wyck, d. b. g.          | 24"x14' Bradford, comp. rest.     |
| 16"x6' Cincinnati, relief. attach. | 30"x12' Flather, like new.        |
| 16"x8' Hamilton, with taper.       | 30"x18' Reed, with chuck.         |
| 16"x10' Cm., turret on shears.     | 32"x14' Putnam, compound rest.    |
| 18"x8' Bradford, c. r. and chuck.  | 32"x18' Pittsburg, d. b. g.       |

#### SHAPERS.

- |                       |                            |
|-----------------------|----------------------------|
| 6" Boynton & Plummer. | 17" Barker & Chard.        |
| 14" Pratt & Whitney.  | 24" Gould & Eberhardt.     |
| 16" Gould & Eberhard. | 26" Putnam, triple geared. |

#### PLANERS.

- |                   |                                   |
|-------------------|-----------------------------------|
| 22x22x5 Whitcomb. | 36x36x12 Gray.                    |
| 22x22x5 Pease.    | 40x38x14 Putnam.                  |
| 26x26x6 Pond.     | 42x42x14 Detrick & H., open side. |
| 26x26x8 Whitcomb. | 44x44x12 Pond.                    |

#### GRINDERS.

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| No. 1 Cin., univ. cutter & tool.   | No. 2 Brown & Sharpe, surface.       |
| No. 2 Norton, univ. cutter & tool. | No. 2 B. & S., surface, with mag.ck. |
| No. 2 Bath, univ. cutter & tool.   | No. 2 Binns, surface, & mag. ck.     |

#### MILLING MACHINES.

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| No. 3 1/2 VanNorman, bench.        | No. 1Y, B. & S., plain, (2).         |
| No. 2 Burke, column, (2).          | No. 2 Cincinnati univ., good as new. |
| No. 1 1/2 B. & S., universal, (3). | No. 2 B. & S., plain.                |
| No. 2 B. & S., plain.              | No. 2 Cincinnati, plain.             |
| No. 2 Owen, plain, (2).            | No. 12 Garvin, plain, (4).           |

#### DRILLING MACHINES.

- |                                 |   |
|---------------------------------|---|
| Henry & Wright, single spindle. | Avey, 6 spindle.                        |
| Henry & Wright, 4 spindle.      | Barr, 4 spindle, (6).                   |
| Henry & Wright, 6 spindle.      | 20" Davis, b. g. & p. f.                |
| Avey, 4 spindle.                | 21" Aurora, b. g., p. f. & tap. attach. |

#### POWER PRESSES.

- |                     |                                     |
|---------------------|-------------------------------------|
| No. 3 Walsh, (4).   | No. 3 Bliss, double crank.          |
| No. 3 Am. Can Co.   | No. 18 Bliss.                       |
| No. 3 Consolidated. | No. 430 McDonald, double crank.     |
| No. P3 Ferracute.   | Humphrey single end punch and       |
| No. P5 Ferracute.   | shear, 36" thr., 14"x14", like new. |
| No. 5 1/2 Walsh.    |                                     |

#### PROFILER.

- No. 2 Garvin 2-spindle, like new.

#### SCREW MACHINES.

- |                            |                             |
|----------------------------|-----------------------------|
| No. 1 Warner & Swasey.     | No. 4 Bardons & Oliver.     |
| No. 2 Warner & Swasey.     | No. 51 National automatic.  |
| No. 2 1/2 Pratt & Whitney. | 6" Cleveland automatic.     |
| No. 2 Woods, lot of tools. | 1 1/2" Cleveland automatic. |
| No. 3 Warner & Swasey.     | No. 60 B. & S. automatic.   |

#### BORING MILLS.

- |                           |                           |
|---------------------------|---------------------------|
| 37" Niles vert., 2 heads. | 34" Colburn, turret head. |
| 42" Bullard, 2 heads.     | No. 3 Binns, horizontal.  |

#### GEAR CUTTERS.

- |                        |                                 |
|------------------------|---------------------------------|
| 42" Gould & Eberhardt. | 20" Brown & S., spur and bevel. |
| 30" Flather.           | 12" Reynolds hobber.            |

#### MISCELLANEOUS.

Bolt cutters, turret lathes, grinders, pipe machines, cutting-off machines, cold saws, hack saws, hammers, bulldozers, motors, vises, Brown & Sharpe surface plates, bench plates, die filers.  
Everything used in the shop.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Western Machinery Co., 610 Baymiller St., Cincinnati, Ohio**

Bolt cutter, National, 4" to 2" taps and dies ..... \$240.  
 Lathe, 27"x14' Bogart, triple geared, 7,000 lbs., comp. rest, hollow spdl. 400.  
 Lathe, 42"x22' Niles, old style, compound rest ..... 425.  
 Radial drill, 24' Hamilton, late type nearly new, tapping attachment,  
 plain table, cone drive ..... 400.  
 Full line of shapers, planers, milling machines, turret lathes, twist drill  
 grinders, chain blocks.  
 Write for particulars and low prices.  
 We pay cash for good metal-working machinery.

### FOR SALE BY

**Girard Machine & Tool Co., 491-493 N. Third St., Philadelphia, Pa.**

#### RADIAL DRILLS.

Prentice Bros. 5' and 6' radial drills, equipped with belt or motor drive,  
 \$450.00 and \$475.00 each.

#### LATHES.

32"x10' Putnam, complete.	22"x14' Bullard, complete.
28"x12' Blaisdell, complete.	16"x8' Greaves-Klusman, speed box.
24"x12' Reed, complete.	14"x7' Lodge & Shipley, complete.
24"x12' Lodge & Shipley.	

#### TURRET LATHES AND SCREW MACHINES.

40" Gisholt turret lathe with standard tool equipment; P. & W. turret lathe  
 with bar equipment; 24" Davis chucking lathe; No. 2 W. & S., and other  
 turret lathes and screw machines.

#### BORING MILLS.

30" Bullard vert; 38" with 2 hds.	44" Rodgers & Hemphill vert. with
28" Niles vert. with 2 heads.	two heads, all with speed boxes.
37" Bullard, with 2 swivel heads.	

#### MISCELLANEOUS.

Drill presses, all sizes.	Milling machines, plain and univ.
Gear shapers, 36" Fellows.	Planers, all sizes.
Grinder, universal, Oesterlein.	Punch presses.
Grinders B. & S. and Landis, modern.	Punch and shr. comb., No. 4 Perkins.
Milling machines, vertical.	Steam hammers, etc., etc.

These machines are modern and late type. Send for our list.

### FOR SALE BY

**Badger-Packard Mchy. Co., 72-74-76 W. Water St., Milwaukee, Wis.**

#### LATHES

24"x12' Lodge & Davis lathe, with countershaft, compound rest and hollow spindle.	\$ 400.
24"x14' Bradford lathe, compound rest, solid spindle, with chuck and friction countershaft.	500.
50"x20' New Haven lathe, compound rest, solid spindle, power cross feed, power on compound rest.	900.
48"x16' Putnam lathe, compound rest, solid spindle, power cross feed.	1000.
38"x26' New Haven lathe, compound rest, power cross feed, solid spin- dle, power feed on compound rest.	750.
60"x17' New Haven lathe.	1050.

#### PLANERS.

60"x60"x16' Niles planer.	\$1200.
24"x24"x 6' New Haven planer.	275.
26"x26"x8' Merrill iron planer	275.

#### MISCELLANEOUS.

Bolt cutter, 3" National No. 6, taps and dies.	\$ 250.
Drill, portable, No. 4 Dallett.	60.
Drill press, 30"	50.
Press, 150-T Elmes, 14' bars and cross head and short bars.	200.
Slotter, 13" stroke, Putnam.	450.
Twist drill grinder, Yankee.	40.
Water grinder, 16" Diamond.	35.

## SECOND-HAND MACHINERY

### FOR SALE BY

**Rumely-Wachs Machinery Co., 121 N. Jefferson St., Chicago, Ill.**

#### ENGINE LATHES.

- |                                |                                  |
|--------------------------------|----------------------------------|
| 16"x 6' Hamilton, q. c.        | 22"x10' Fiefield.                |
| 16"x 8' American, q. c. taper. | 24"x10' Schumacher & Boye, q. c. |
| 18"x 8' Reed.                  | 24"x24' Fiefield.                |
| 18"x 8' Hamilton.              | 26"x10' American.                |
| 18"x10' Rahn-Carpenter.        | 36"x12' Schumacher & Boye.       |
| 20"x 9' Draper.                | 36"x14' Fiefield.                |
| 21"x10' Bradford.              | 50"x22' Fiefield, triple geared. |

Also lot of smaller Lathes.

#### UPRIGHT DRILLS.

- |                                  |   |
|----------------------------------|---|
| 20" Davis.                       | 31" Barnes, sliding head.                   |
| 22" Lodge & Davis.               | 36" Footc-Burt, heavy duty.                 |
| 22" Prentiss.                    | 24" Baker Bros. heavy duty, compound table. |
| 23" Rockford, sliding head.      | 40" Lodge & Davis, sliding head.            |
| 28" Sibley & Ware, sliding head. |   |
| 28" Barnes, sliding head.        |   |

#### RADIAL DRILLS.

- |                                 |                         |
|---------------------------------|-------------------------|
| 3' Fosdick, plain, tapping att. | 4 1/2' Bickford, plain. |
| 4' Fosdick, plain, tapping att. | 5' Prentiss, plain.     |

#### SHAPERS.

- |                      |                        |
|----------------------|------------------------|
| 15" Hendy, friction. | 16" Acme, b. g. crank. |
| 16" Jueugst, crank.  | 16" Stockbridge.       |

#### PLANERS.

- |                            |                                  |
|----------------------------|----------------------------------|
| 16"x16"x 4' Lathe & Morse. | 30"x30"x 8' Putnam.              |
| 20"x20"x 4' Putnam.        | 36"x36"x 8' Fitchburg.           |
| 22"x22"x 5' Wheeler.       | 36"x36"x 8' American, two heads. |
| 24"x24"x 6' Pond.          | 36"x35"x15' Woodward & Powell.   |

#### MILLING MACHINES.

- |                                   |                                    |
|-----------------------------------|------------------------------------|
| No. 1 Brown & Sharpe, universal.  | No. 3 Kempsmith, plain.            |
| No. 1 Brown & Sharpe, plain, (3). | No. 3 Cincinnati, plain.           |
| No. 1-v Brown & Sharpe, pl., (6). | No. 3 Newton, plain.               |
| No. 21 Garvin, plain, (2).        | No. 3 Pratt & Whitney, plain, (2). |
| No. 2 Brown & Sharpe, plain.      | No. 3 Becker, vertical.            |
| No. 2 Kempsmith, plain.           | No. 4 Becker, vertical.            |
| No. 2-H Brown & Sharpe, plain.    | No. 4-B Becker, vertical.          |

#### SCREW MACHINES.

- |                                 |  |
|---------------------------------|--|
| No. 1 Garvin, 1/2".             | No. 3 Foster, 1 5-16".                   |
| No. 1 Brown & Sharpe.           | No. 12 1/2 Garvin, hollow feed 2".       |
| No. 2 Bardons & Oliver.         | No. 6 Warner & Swasey, pwr. fd. 2 1/2".  |
| 1" Foster & Kimball.            | 1 1/2" Pratt & Whitney, full auto., (3). |
| 1" Pratt & Whitney, power feed. | No. 00 B. & S., full automatic.          |
| 1" Acme.                        |  |

#### TURRET LATHES.

- |                                  |                      |
|----------------------------------|----------------------|
| No. 3 Bardons & O., Fox Monitor. | 21" Gisholt.         |
| 2x24" Jones & Lamson, (2).       | No. 22 1/2 Garvin.   |
| 18"x 6' Lodge & Davis, (2).      | 24" Conradson.       |
| 18" Windsor.                     | 25" Warner & Swasey. |
| 13" Gisholt.                     |                      |

#### BORING MILLS.

- |                           |                       |
|---------------------------|-----------------------|
| 30" Bullard.              | 42" Bullard, 2 heads. |
| No. 1 Barnes, horizontal. | 42" Colburn, 2 heads. |

#### PRESSSES.

- |                          |                                     |
|--------------------------|-------------------------------------|
| No. 18 Bliss, o. b. i.   | No. 30 Bliss, arch.                 |
| No. 19 Bliss, o. b. i.   | No. 6 R. & K., o. b. i.             |
| No. 42 Bliss, o. b. i.   | No. 12-A Adrance, drawing.          |
| No. 119 Crosby, o. b. i. | No. 2 Billings & Spencer, trimming. |

#### MISCELLANEOUS.

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| Gear cutter, No. 3 B. & S. 26".   | Keyseater, No. 1 Davis.              |
| Gear cutter, No. 4 B. & S. 48".   | Keyseater, No. 2 Davis.              |
| Grinder No. 1 Landis, plain.      | Keyseater, No. 3 Baker.              |
| Grinder, 10x50 Norton, plain.     | Profiler, No. 4 Garvin.              |
| Keyseater, No. 2 Mitts & Merrill. | Punch, Kling Bros. 19" throat.       |
| Keyseater, No. 3 Mitts & Merrill. | Thread miller, 6x48 Pratt & Whitney. |

# THE E. L. ESSLEY MACHINERY CO

555-557 WASHINGTON BLVD CHICAGO  
222 GRAND AVE MILWAUKEE

## Upright Drills and Radials.

2' American, sensitive radial.  
4' Bickford, pl. radial, rebuilt.  
24" Superior, s.h., b.g., p.f., a.s.  
D-3 24" Colburn, high duty pl. tbl.  
34" Baush, plain radial.

## Lathes.

14x6 Monarch, 3-st. cone, d. b.g.  
16x6 Springfield, standard pat.  
22x12 Milwaukee, dbl. bk. grd.  
20x8 Lodge & Shipley, q. c.  
16x8 Lodge & Shipley, q. c.

## Milling Machines.

No. 2 Owen plain, new.  
No. 3 Owen universal, new.  
No. 3 LeBlond pl., dbl. bk. grd.

## Boring Mills.

36" Bridgeport, one head.  
60" Baush, 2 heads.  
51" Niles, 2 heads.  
Boring machine, Barrett horizontal, 31" bar.

## Shapers.

20" Kelley, single geared.

## Miscellaneous.

Gear hobber, No. 1 Adams-F.  
Gear hobber, Reynolds.  
Grinder, Bath universal, 10x25".  
Grinder, automatic surface, No. 3  
Diamond, 48x12x9.  
Hammer, bd. drop, 600. lb. P. & W.  
Hammer, single frame steam,  
200 lb. Chambersburg.  
Power punch, 12" style-C Cleveland, new, cap. 1" in 3" plate.  
Punch & s., No. 2 Cin'ti 12" thrt.  
Punch & shear, New Doty, 17" throats, 1x1".  
Saw, Smith & P., cap. 41" rods.  
Saw, No. 14 Higley, 3 blades,  
arranged for motor drive.  
Shear, rot. slitting, 6" thrt., 4" cap.  
Wire straightener, 3-16" Shuster,  
"Adl" model, cap. 4", new.

## WHEN YOU INQUIRE

of advertisers herein, won't you kindly remember to say somewhere in your communication that the inquiry comes from Hitchcock's Machine Tool List? Advertisers are human; they like to know that the medium in which they spend their money is received and consulted by machinery users. Not being mind readers, they can only know this when you tell them, and if you neglect to tell them, the Tool List is deprived of credit for the service it has rendered.

**"New York's Greatest Clearing-House—J. J. McCabe"**

**"New York's Lowest Prices"**

# This coming year Make your appropriation for Machine Tools go further—

## Take advantage of these big values at half the new prices

### Heavy Triple-Geared Lathes.

65"x25' Pond, compound rest, power cross and angular feeds, 35,000 lbs.  
56"x16' Putnam, c. rest, 25,000 lbs.  
52"x28' Pond, extra heavy, 31,000 lbs.  
48"x24' Fitchburg, raising blocks to swing 66", 23,000 lbs.  
42"x20' Betts, ex. hvy., c.r., 20,000 lbs.  
42" Double-head steel tired car-wheel lathe, Niles Tool Works, 35,000 lbs.  
36"x16' Niles, comp. rest, 18,000 lbs.  
26-48"x14' McCabe dbl.-sp. lathe, hvy. pat., with grd. face plate, like new.  
27"x14' L. & S. massive. q.c., arranged for motor-dr., gd. hd., 12,000 lbs.  
Other sizes & style of lathes in stock.

### Heavy Iron Planers.

120"x120"x20' Niles, 4 hds. fine cond.  
72"x72"x14' Pond, 4 heads, 60,000 lbs.  
60"x60"x18' W. & P., 4 hds. 55,000 lbs.  
60"x60"x12' Pond, 4 heads, 50,000 lbs.  
48"x48"x16' Pond, 3 heads, 30,000 lbs.  
48"x48"x12' Powell, 2 heads, 25,000 lbs.  
Other sizes—down to 24"x6'.

### Heavy Upright Boring and Turning Mills.

14-20' Extension type, dbl. hd., movable housings, Niles, c.s., slott. att.  
100" Betts, double head, 36,000 lbs.  
72" Pond, double head, 30,000 lbs.  
60" Bullard, double head, 25,000 lbs.  
51" Baush, 42" King, 36" Bullard, all double heads, thoroughly modern.

### Heavy Turret Lathes.

Rigid type Pond, 28" Gisholt pat. tier, 4" hollow spindle.  
Gisholt standard pat., 24", 44" h. s.  
Gisholt standard pat., 24", 24" h. s.  
Potter & Johnston, 22", 2" h. s.  
J. & L. 3x36" flat turret, sliding hd.  
J. & L. 2x24" flat turret, sliding hd.

### Heavy Radial Drills.

7' arm, 144" swing, Pond.  
6' arm, 144" swing, heavy, Niles.  
5 1/2' arm, 132" swing, plain, Prentice.  
5' arm, 120" swing, half-universal, swivel arm, Niles Tool Works.  
5' arm, 120" swing, plain, Prentice.  
4 1/2' arm, 108" swing, half-universal, swivel arm, Warren.  
8-sp. mult. high-speed, 1 1/2" Baush.

### Heavy Milling Machines.

Planer type, 24"x8" Niles-B.-P.  
Planer type, 24"x12" Bement-Miles.  
Plain No. 24 Brown & Sharpe, table 81x174", speed box.  
Plain No. 4 B. & S., table 60"x14".  
Plain No. 5-C Becker-B. tbl. 60"x16".  
Mfr's style, table 58"x16", Newton.  
Plain No. 15 Garvin, table 42"x12".

### Heavy Tools.

Slotter, 24" all auto. feeds, Sellers.  
Slotter, 19" all auto. feeds, N.-B.-P.  
Slotter, 16" all auto fds., Bement-M.  
Punch and shears, 66" throat (single) weight 55,000 lbs. Hilles & Jones.  
Punch and shears, 60" throat (single) weight 52,000 lbs. Hilles & Jones.  
Punch and shears, 48" throat (single) weight 30,000 lbs. Long & A.  
Punch and shears, 42" throat (single) weight 45,000 lbs. Hilles & Jones.  
Splitting shears, 38" throat 6,000 lbs.  
Punch and shears, 30" throat (single) weight 12,000 lbs. Cleveland.  
Cutting-off mch., 9" Bement-Miles.  
Steam hammer, 400 lb. sgl. frame Erie.  
Bevel gear planer, 24" Gleason.  
22" Spur & bevel gear cutter, G. & E.  
12" Dbl. hd. traveling head Shaper.  
Horizontal boring and drilling machine, 2 1/2" bar, Bement.

**J. J. McCabe, 30 Church St., New York**

During the dull times incident to the European war, we are taking the opportunity to rearrange and renew our shop equipment. We therefore offer the following machine tools, all in first-class running order:

- 1-17"x 6' Standard Engine Lathe with compound rest and box turret on carriage.
- 1-17"x 6' Standard Engine Lathe with compound rest.
- 1-17"x 6' Standard Engine Lathe with plain rest.
- 1-17"x 6' Standard Engine Lathe, compound rest interchangeable with turret on carriage.
- 1-17"x 6' Standard Engine Lathe, 3 Step Cone Friction Double Back Gear.
- 1-17"x 8' Standard Engine Lathe, 3 Step Cone Friction Double Back Gear.
- 1-17"x 10' Standard Engine Lathe with compound rest.
- 1-17"x 12' Standard Engine Lathe with compound rest.
- 1-24" raised in sand to swing 27 1/4"x 10' Standard Engine Lathe with compound rest.
- 1-25"x 10' Bradford Engine Lathe with compound rest.
- 1-28-36"x 14' New Haven Engine Lathe not screw cutting.
- 2-2"x 24" Jones & Lamson (6 head) Flat Turret Lathes.
- 1-30"x 30"x 8' S. H. Smith-Silk Planer.
- 1-36"x 36"x 10' D. H. Pond Planer.
- 1-42"x 42"x 12' Wheeler Planer, one head.

**THE GREAVES-KLUSMAN TOOL CO., Cincinnati, Ohio**

In replacing our manufacturing equipment, we find the following first class Used Machine Tools, which we offer at attractive prices:

#### LATHES

- 16"x 8' Reed.
- 17"x 6' Gray.
- 18"x 8' Lodge & Shipley, single pulley driven. (2).
- 20"x 8' Lodge & Shipley, q. c. g.
- 20"x 10' Lodge & Shipley, q. c. g.
- 20"x 12' Lodge & Shipley, q. c. g.
- 24"x 8' Lodge & Shipley, q. c. g.

#### SPECIAL LATHES

- No. 3 Lodge & Shipley Rapid Reduction Lathe.
- 14"x 6' Towaley Speed Lathe.

#### METAL SAWS

- Globe Power Hack Saw, 8" cap.

#### MISCELLANEOUS MACHINES

- One Marion Double Grinder.
- One Marion Double Grinder on stand.
- One Diamond Combination Grinding and Polishing Stand.
- One Sturtevant Blower, Diameter of outlet 24".
- Universal Swivel Table for Radial Drill.
- Brown & Sharpe Grindstone Frame for 5"x 26" Stone.
- One Mueller Grindstone Frame for 4"x 27" Stone.
- One 12' x 40" Mumford Molding Machine.
- One Ohio Planer, 24"x 24"x 12' with two heads on cross rail.

**The Lodge & Shipley Machine Tool Co.  
CINCINNATI, OHIO, U. S. A.**

# The Value of Office Appliances

(The Magazine)

## to You

who are the buyers and users of office appliances, supplies and furniture—you who pay the bills and count the cost—is not based on theoretical plans or ideas. It is the more tangible value of dollars and cents. Its advertisements tell you just what, where and how to buy to simplify office methods, and to save you money in the doing.

If you are interested in installing the very latest devices for the handling of your detail work, Office Appliances offers the *only* medium of gaining a close technical knowledge of those on the market.

**This 140 Page Monthly Magazine of Office Equipment is a touch with the market place of the modern machinery of business; a universal office appliance gazetteer, a manufacturers' index, a buyers' guide, a permanent exposition of all that is newest, oldest or best in the realm of business equipment.**

Time spent in reading **Office Appliances** is in reality time saved. A few minutes with your Business Machinery Magazine represents **hours** of editorial time, and an infinite amount of patience and skill in the selective process.

### Pin a Dollar Bill

to this advertisement and mail to us today. That dollar bill will bring to your desk for eight months the one technical magazine of all the business world which will keep you, your auditor, your purchasing agent and your entire organization on the firing line of business—abreast of the times and in line with progress.

A sample copy is **free** for the asking, but why not pin the dollar bill to this advertisement **today**, and let us start the service at once?

You will see the returns on that dollar grow with each succeeding month.

**The Office Appliance Co.**  
Plymouth Building, Chicago, Ill.

**"New Britain" Grey Iron Legs Make  
Better and Cheaper Benches**



This is one of those rare cases where you pay less and get more—your benching costs 25 cents a foot less than if built with wooden supports.

The benching is built on the unit system, so it may be moved anywhere and rearranged. It is solid, rigid, durable, and independent of wall support.

*Our Bench Leg Booklet explains fully  
We've also a Shop Furniture Catalog*

**The New Britain Machine Co.**  
60 Chestnut St., New Haven, Conn.



